



International Organization for Standardization
Technical Committee 184
Subcommittee 4
Industrial Data

TC 184/SC4 N 739

Source: Secretariat
Date: 1998-06-17

CUMULATIVE LIST OF RESOLUTIONS

Attached is a list of all resolutions adopted by the SC4 Committee at each of the following meetings:

| | | |
|----------|----|------------------------|
| July | 84 | Washington DC, USA |
| March | 85 | Paris, France |
| January | 88 | Rotterdam, Netherlands |
| November | 88 | Tokyo, Japan |
| January | 90 | Paris, France |
| June | 90 | Gothenburg, Sweden |
| July | 91 | Sapporo, Japan |
| February | 92 | Oslo, Norway |
| October | 92 | Dallas, TX USA |
| February | 93 | Turin, Italy |
| October | 93 | Berlin, Germany |
| May | 94 | Davos, Switzerland |
| October | 94 | Greenville, SC USA |
| March | 95 | Sydney, Australia |
| October | 95 | Grenoble, France |
| June | 96 | Kobe, Japan |
| October | 96 | Toronto, Canada |
| June | 97 | San Diego, CA USA |
| October | 97 | Florence, Italy |
| June | 98 | Bad Aibling, Germany |

This document reflects the most current listing of SC4 resolutions and supersedes ISO TC184/SC4 N681

CUMULATIVE LIST OF SC4 RESOLUTIONS

RESOLUTION 1: (Gaithersburg - July 1984)

SC4 recognizes the need for a new standard for the external representation of product model data. This standard will be based upon existing data exchange initiatives including the US IGES and PDDI, the French SET, the German VDA/BDMA-FS, and the UK NEDO.

RESOLUTION 2: (Gaithersburg - July 1984)

The SC adopts the following goal and objectives.

Goal: The creation of a standard which enables the capture of information comprising a computerized product model in a neutral form without loss of completeness and integrity, throughout the life cycle of the product.

Design Objectives: The standard must feature:

- Flexibility to permit expansion without invalidating existing portions of the standard.
- Efficiency for processing, communication and storage.
- Rigorous and formal documentation.
- The minimum possible set of data elements.
- Separation of data content from physical format.
- A logical classification of data elements.
- Compatibility with other existing relevant standards.

Near Term Objectives: The initial objective is to produce a Version 1 of standard for discrete mechanical parts including the following:

- A product model core to include:
 - * Geometry
 - 3-D wireframe/surfaces
 - Boundary representation
 - Constructive solid geometry
 - * Tolerances
 - * Features
 - * Bill of materials including: material, process specification, part identification, notes.
- Application data requirements or application influence on product model core from the following areas:
 - * Drafting
 - * Finite element modelling
 - * Machining
 - * Quality assurance.
 - * Data management
- A mechanism for standard parts
- Parametric design features.

- Data syntax and file structure independent of the above contents.

Drafting is to include existing national and international standard requirements. Where possible, common semantics will be defined for use with a flag identifying desired drafting standard to produce specific display information.

More stable geometric forms of curves and surfaces preferred. Implementation guidelines should include conversion methods. Constructive and evaluated (result) forms of geometric entities are needed.

A draft proposal for Version 1 is required for ballot by SC4 by the end of 1985.

RESOLUTION 3: (Gaithersburg - July 1984)

SC4 recommends that its member bodies involved in the technical development of the standard for the external representation of product model data should adopt an organizational structure within their national activities to address four discrete main topics:

- Definition of data content (semantics)
- Definition of data syntax and file structure
- Specification of information for applications
- Implementation and validation of the standard.

The structure will support international collaboration within each topic, as well as integration of activities across individual national efforts.

RESOLUTION 4: (Gaithersburg - July 1984)

SC4 agrees to establish Working Group 1, Technical Coordination and Support, with the following terms of reference:

- To provide technical support and recommendations for SC4
- To coordinate national technical developments
- To resolve technical differences
- To collate national technical contributions for inclusion in the draft ISO document.

Jerry Weiss is appointed Convener.

SC4 recognizes a possible need to establish other working groups in the future to cover:

- Guidelines for implementation
- Procedures for validation
- Data for specific applications
- Developments due to new technology

RESOLUTION 5: (Gaithersburg - July 1984)

ISO TC184/SC4 thanks Mr. Bradford Smith for providing his excellent work as chairman of this meeting and proposes to nominate Mr. Smith as Chairman of ISO TC184/SC4 for a three-year term.

RESOLUTION 6: (Gaithersburg - July 1984)

ISO TC184/SC4 expresses its appreciation to NBS and ANSI and the members of these delegations for their gracious hospitality and for the excellent services provided for this meeting.

RESOLUTION 7: (Paris 1 - March 1985)

The drafting committee is constituted to include:

- B. LUCET for the French language
- I. BODNAR for the English language

RESOLUTION 8: (Paris 2 - March 1985)

The agenda SC4 N 13 for the March 85 meeting is adopted as amended by SC4 N 15.

RESOLUTION 9: (Paris 3 - March 1985)

SC4 reconfirms its goal as expressed in Resolution #2.

To develop as soon as possible a single international standard for the exchange of product definition data to be called the standard for the exchange of product model data (STEP).

SC4 will not concern itself with an interim solution based on any existing national standards, although it recognizes that these standards will continue in parallel use until STEP becomes fully operational.

All efforts will be concentrated to achieve a first version of STEP so that its effective industrial use can start in 1990.

RESOLUTION 10: (Paris 4 - March 1985)

SC4 agrees that, whenever existing national standards are enhanced, development should be undertaken in parallel with the corresponding STEP effort, using the same reference model to ensure that compatible concepts are used. This will cause the standards to converge towards STEP and will simplify the eventual migration from the current standards to STEP.

RESOLUTION 11: (Paris 5 - March 1985)

SC4/WG1 is thanked for its accomplishments at its first meeting and is directed to:

- Develop documentation requirements for future work
- Develop a specific list of documents needed for a first version of STEP
- Develop precise functional requirements for Version 1 of STEP
- Develop summary functional requirements for Version 2 of STEP
- Develop a work program and time schedule at its Paris meeting which will aim at the completion of the technical specification of STEP Version 1.0 by the end of 1986.

RESOLUTION 12: (Paris 6 - March 1985)

SC4 recognizes the excellent work of Mesdames LEBADEZET and CHAUMONT, and thanks AFNOR for its hospitality in hosting this session.

RESOLUTION 13: (Rotterdam - January 88)

To approve the agenda for the Rotterdam meeting as amended.

RESOLUTION 14: (Rotterdam - January 1988)

SC4 agrees to meet at intervals of not more than one year, to allow national standards organizations and ISO management to formally monitor progress in STEP development.

RESOLUTION 15: (Rotterdam - January 1988)

SC4 will define, by April 1988, an efficient organization and method of operation, based on working groups and an agreed project plan, which will report to SC4 every quarter to clearly demonstrate progress against that plan.

RESOLUTION 16: (Rotterdam - January 1988)

SC4 will define and endorse, by 1 April 1988, a realistic workplan for STEP development, showing major milestones and taking into account existing material, available man hours, contributors qualifications and ISO procedures and to have this available to SC4 members.

RESOLUTION 17: (Rotterdam - January 1988)

SC4 reaffirms the technical objectives of the STEP project as stated in resolutions 2 and 9 (of SC4). The STEP standard and its implementation shall feature:

- wider scope than existing national standards
- improved performance over existing standards
- structured application-oriented sets of entities and topical models
- unambiguous definitions
- modular structure
- upward compatibility between versions

RESOLUTION 18: (Rotterdam - January 1988)

SC4 asks its secretariat to circulate for comments to the national bodies the following reference documents of WG 1 prepared at the January 1988 meeting:

- Document 0.0 - Project Plan
- Document 0.1 - Preliminary Design
- Document 0.2 - Work Plan Status
- Document 9.0 - Requirements for STEP

These documents will be distributed before the end of February and comments should be received within two months.

RESOLUTION 19: (Rotterdam - January 1988)

SC4 asks its secretariat to circulate for comments of the national bodies the following parts of STEP Version 1.0 as a minimum set:

- Document 4.1.1 - EXPRESS
- Document 4.2.1 - Physical File Format
- Document 4.2.2. - Mapping
- Document 4.1.2.1 - Geometry and Topology

These documents will be distributed after the next meeting of WG 1 in March 1988 to serve as a basis for a draft proposal. Comments should be received within two months. After this period, these documents should be forwarded to the Central Secretariat for registration as a DP and for ballot by SC4 at their next meeting. Other documents considered by WG1 to be ready for review may be distributed at the same time.

RESOLUTION 20: (Rotterdam - January 1988)

SC4 directs WG 1 to produce a framework for software implementation, including implementation subsets, such as in VDAIS and application subsets, together with testing and validation procedures in parallel with each component of the standard submitted for approval.

RESOLUTION 21: (Rotterdam - January 1988)

SC4 agrees that implementation of the STEP standard shall provide a method for migrating data from existing national standards such as IGES, SET and VDA-FS to the new standard, and directs WG 1 to establish the guidelines for the necessary tools and procedures to receive this data.

RESOLUTION 22: (Rotterdam - January 1988)

SC4 wishes to formally recognize and welcome the potential contribution that can be made by the proposed PDES cooperative in accelerating the development and implementation of STEP.

SC4 considers that it is essential to establish a working relationship with the cooperative when it is launched, similar to that which has already been achieved with the ESPRIT CAD*I, French SET and German VDA projects.

RESOLUTION 23: (Rotterdam - January 1988)

SC4 thanks Mr. Bradford M. Smith for his work as chairman of SC4 and proposes to nominate Mr. Smith for a second three-year term.

RESOLUTION 24: (Rotterdam - January 1988)

SC4 directs WG 1 to concentrate its effort to complete Presentation and Drafting documents (according to the ISO drafting standards) so it will be available to be included in the Draft Proposal of STEP Version 1 for adoption at the SC4 meeting scheduled for 2 December 1988 in Tokyo.

RESOLUTION 25: (Rotterdam - January 1988)

SC4 confirms that the STEP standard will be defined using the EXPRESS language.

RESOLUTION 26: (Rotterdam - January 1988)

SC4 directs WG 1 to maintain a list of "Open/Resolved Issues", distributed prior to each WG 1 meeting, as a basis of preparation and subsequent discussion by the experts.

RESOLUTION 27: (Rotterdam - January 1988)

As standards developments must be based on technical excellence and use of the limited world wide expertise available, SC4 recommends that ISO assist in obtaining cooperation and coordination within related standards work such as in the electrical/electronic area with EDIF, STEP and VHDL.

RESOLUTION 28: (Rotterdam - January 1988)

SC4 wishes to accept the offer of a liaison with SC 24.

RESOLUTION 29: (Tokyo - December 88)

SC4 approves the registration of STEP as an ISO Draft Proposal (DP) in accordance with ISO Directives Section 6.4.1.1.. The DP comprises the following WG1 documents:

N279 (Physical File Structure)
N280 (Mapping from EXPRESS to Physical File Structure)
N283 (Introduction, Scope and Definitions)
N285 (Test Methods)
N287 (EXPRESS)
N284 (IPIM) with the exception of the user-defined-entity (Chapter 4.4.1.13)

SC4 directs its secretariat to circulate the DP for letter ballot according to ISO Directives Section 6.4.1.3 and 6.4.1.4. The ballot shall include voting on each clause and each section of Clause 4 of the DP. This letter ballot shall be open for three months from the date of circulation (6.4.2.1).

In addition to the DP, circulation shall include for information and commenting:

N286 (Classification Methods)
N288 (Annex D)
N289 (Annex E)

SC4 also directs WG1 to produce:

- A list of essential open issues related to the DP
- Guidelines for the requested comments, including a separate vote on the document(s) as described above.

These are to be circulated with and referenced in the DP to assist the review by the appropriate bodies.

RESOLUTION 30: (Tokyo - December 88)

SC4 establishes an editing committee to finalize the text of the Draft Proposal for submission as a Draft International Standard and maintain configuration control so that all future changes be documented and approved.

Each P-member is invited to nominate one representative to the SC4 secretariat by January 31, 1989.

The Editing Committee reports directly to the SC4. Its tasks comprise:

- collecting and registering issues on the STEP DP
- collecting of comments
- assessing of comments as technical, editorial or irrelevant
- passing technical issues and comments to WG1 for technical solution
- incorporating updates produced by WG1
- editorial improvement of the standard
- conformance of the standard to ISO Directives and Drafting Rules.

All changes introduced by the Editing Committee must be approved by WG1.

RESOLUTION 31: (Tokyo - December 88)

SC4 appoints Curtis Parks of NIST, USA to serve in the capacity of Chairman of the Editing Committee until that committee has convened and established their own chairman. The Chairman shall convene the Editing Committee no later than the next WG1 meeting.

RESOLUTION 32: (Tokyo - December 88)

SC4 directs WG1 to consider a logical subdivision of the STEP standard into an open set of consistent standards.

RESOLUTION 33: (Tokyo - December 88)

STEP shall be based on one single, complete, implementation-independent Product Information Model, which shall be the Master Record of the integrated topical and application information models. SC4 recognizes that multiple implementation technologies exist and directs WG1 to identify and harmonize support for those technologies.

Additional work plans to develop implementation-specific extensions must be approved by SC4.

RESOLUTION 34: (Tokyo - December 88)

SC4 resolves that application profiles of STEP shall form separate parts of the STEP standard, in order to provide a basis for conformance testing.

RESOLUTION 35: (Tokyo - December 88)

SC4 directs WG1 to obtain SC4 approval for the initiation of activities regarding the development of new topical and application models for STEP.

RESOLUTION 36: (Tokyo - December 88)

SC4 directs WG1 to develop a topical model that deals with aspects of motion and kinematics as is required for the representation of products for which these aspects are essential (mechanisms, industrial robots, and others) as well as for the representation of assembly and disassembly operations.

RESOLUTION 37: (Tokyo - December 88)

SC4 directs WG1 to develop a topical model that deals with aspects of product life cycle support. This model shall be added to the STEP Information Model.

RESOLUTION 38: (Tokyo - December 88)

SC4 directs WG1 to develop a topical model that deals with aspects of material properties with relationship to design, testing, and analysis of products, which shall be added to the STEP Information Model.

RESOLUTION 39: (Tokyo - December 88)

SC4 directs WG1 to undertake a study of all existing initiatives relating to the use of CAD Standard Parts and to recommend any action required for international harmonisation and/or standardization.

RESOLUTION 40: (Tokyo - December 88)

SC4 asks its member bodies and liaisons to encourage implementation and validation of the STEP Draft Proposal or parts of it as soon as majority approval has been gained. This encouragement is to be directed to industries, universities, research organisations and organisations or projects that are funded explicitly for work related to STEP such as the US PDES Inc., the US NIST PDES

Testbed, the European project CADEX, the German KCIM project and others. The member bodies are encouraged to identify these activities to the secretariat for purposes of harmonisation.

RESOLUTION 41: (Tokyo - December 88)

SC4 directs the secretariat to establish stronger liaisons with other international bodies, especially the appropriate bodies in the areas of AEC, FEM and Electrical/Electronics. Member bodies shall identify to the secretariat potential liaisons.

Furthermore, SC4 directs the secretariat to prepare a package of technical documents with cover letters and send them to liaison organisations to encourage more active communication. Relevant papers for this package are to be sent to the secretariat.

RESOLUTION 42: (Tokyo - December 88)

SC4 directs that WG1 develop a plan for the future development of STEP. The working plan is to be approved by SC4 before October 1989 by mail ballot.

RESOLUTION 43: (Tokyo - December 88)

SC4 and WG1 would like to record a vote of thanks to Japan as host nation for the excellent facilities and support for the November 1988 meeting.

RESOLUTION 44: (Paris - January 1990)

ISO TC184/SC4 invites and solicits proposals from IEC organisations and others for cooperative development and participative approval of the appropriate parts of STEP. In particular, we invite the representatives of EIA, VHDL, IPC D350, and EDIF to take part in this work through the exchange of reference models. This will follow the example of inter-committee cooperation set by the ISO and the IEC in the MMS project and companion standards.

RESOLUTION 45: (Paris - January 1990)

SC4 respectfully recommends to the TC184 chair that the title of the SC4 Committee be changed to "Industrial Data and Global Manufacturing Programming Languages."

RESOLUTION 46: (Paris - January 1990)

Following the assignment of the accepted new work item on a standard parts library, ISO TC184/SC4 establishes a new working group with the following title and task:

TITLE: Standard for the Neutral Representation of Standard Parts

SCOPE: The development of an international standard for the implementation of standard parts which is independent of any computer-aided design system. This should take into account the mapping of the external standard representations into the internal representations of a CAD system.

SC4 accepts the offer of the member body of Germany, F.R. to undertake the convenership of this working group. Each "P" member of SC4 is asked to nominate one expert and one alternate for the Working Group. Names shall be forwarded to the SC4 chair by 1 April 1990.

RESOLUTION 47: (Paris - January 1990)

SC4 affirms the formation of a new project within WG1 to study the requirements and structure of libraries within STEP. The title of the project will be "Library Structures." Mr. P. Harrow (UK) and Mr. P. Dienst (FRG) are appointed as joint project leaders to ensure coordination of the results between this project and the Standard Parts effort.

RESOLUTION 48: (Paris - January 1990)

An advisory group called "Strategic Planning" is to be created to advise the SC4 chair on matters concerning strategic planning and coordination of SC4 activities. SC4 accepts the offer of the member body of France to undertake the convenorship of this advisory group.

Terms of reference for the Strategic Planning Advisory Group are:

- a) Recommending goals and objectives for future work.
- b) Coordinating activities across the different areas of scope of SC4.
- c) Recommending the general methodologies required to undertake SC4 work.
- d) Acting as a liaison with other relevant bodies.

Each "P" member of SC4 is asked to nominate one expert and one alternate for the Strategic Planning Advisory Group. Names shall be forwarded to the SC4 chair by 1 April 1990.

RESOLUTION 49: (Paris - January 1990)

An SC4 Project Management Advisory Group shall be established to provide project management and technical strategy for product data work items.

Terms of reference of the Project Management Advisory Group are:

- a) Set functional goals for the Product Data Definition Working Groups.
- b) Set project planning, work breakdown structure, and scheduling.
- c) Coordinate activities between Product Data Definition Working Groups.
- d) Set criteria for success.
- e) Evaluate quality.

Each "P" member of SC4 is asked to nominate one expert and one alternate for the Advisory Group. Names shall be forwarded to the SC4 chair by 1 April 1990.

The SC4 Secretariat shall ask each "P" member body for their interest in the convenorship.

RESOLUTION 50: (Paris - January 1990)

SC4 resolves to produce a series of Technical Reports which document the present state of STEP technology. The contents of the report are subject to change. In particular, this effort requires:

- a) Identification by WG1 subgroups of all Parts which are technically stable.
- b) Editorial work on Parts to ensure conformance to ISO style and incorporation of all ballot comments agreed to by Part owners.
- c) Balloting by SC4 to register each Part as a Committee Draft (CD).
- d) Balloting by SC4 P-members on each CD.

- e) SC4 decision upon review of ballot results to publish as a Technical Report.

RESOLUTION 51: (Paris - January 1990)

SC4 recommends the creation of a small ad hoc working group of SC4 to select topics on which to develop application protocols. These topics should be circulated to national bodies for comment and prioritisation by 31 March 1990.

RESOLUTION 52: (Paris - January 1990)

In response to the request from TC184, and in order to comply with the new ISO/IEC rules, SC4 proposes to reorganise its work on STEP into the following Working Groups:

| | |
|------------------------------|----------------|
| Resource Models | (ex WG1 SG1) |
| Application Reference Models | (ex WG1 SG2) |
| Implementation Methods | (ex WG1 SG3) |
| Conformance & Testing | (ex WG1 SG4) |
| Framework & Methodology | (ex WG1 SG5/7) |
| Information Integration | (ex WG1 SG6) |

Under each Working Group, any required subdivision of the work shall be achieved by the definition of specific projects, with project leaders appointed by SC4.

Member bodies are requested to review and comment on the proposal to the Secretariat by 31 March 1990 and provide proposals for the convenerships of the WGs.

An ad hoc group of SC4 shall meet at the next WG1 meeting to resolve any comments and prepare a formal proposal for balloting at the June meeting of SC4.

RESOLUTION 53: (Paris - January 1990)

In response to the changing of scope, SC4 is ready to welcome new work items, namely

- a) Industrial manufacturing management data
- b) Quality data
- c) Maintenance data

Members of SC4 are solicited to send to the secretariat proposals for new work item definitions.

RESOLUTION 54: (Paris - January 1990)

The term "Application Profile" identified in SC4 Resolution 34 (Tokyo #6) is to be replaced by the term "Application Protocol."

RESOLUTION 55: (Paris - January 1990)

SC4 adopts the general strategy for breaking the DP 10303 (SC4 N38) into a number of smaller volumes, each to be processed separately through approval of a Committee Draft and then to be balloted upon as a set of qualified and integrated documents representing a Draft International Standard.

RESOLUTION 56: (Paris - January 1990)

It is resolved that SC4 shall create new versions of STEP where a version is defined as a specific, dated collection of Committee Draft parts that are advanced simultaneously to DIS.

RESOLUTION 57: (Paris - January 1990)

The current ISO/STEP parts division and numbering scheme shall be considered tentative until a final recommendation is received from WG1. For timely distribution to SC4, this document must be received by the SC4 chair by 1 March 1990.

RESOLUTION 58: (Paris - January 1990)

The development and integration of information models for draughting is a critical item in the STEP development schedule. SC4 encourages member bodies to consider increasing their participation in this work to match the stated needs of their industries.

RESOLUTION 59: (Paris - January 1990)

SC4 wishes to thank France for hosting the meeting of the committee this week.

RESOLUTION 60: (Gothenburg - June 1990)

SC4 charges the Strategic Planning Advisory Group with carrying out the intent of SC4 Resolution 44 (Electrical Harmonization), particularly working toward a resolution of the developing situation with regard to the EIA petition to IEC (dated April 12, 1990). (USA)

RESOLUTION 61: (Gothenburg - June 1990)

SC4 asks its electrical project leader to develop one or more electrical schematic application protocols based upon documented efforts such as the German VNS, the French SET electrical, the IEC TC3, and the U.S. IGES and EDIF electrical projects.

RESOLUTION 62: (Gothenburg - June 1990)

SC4 adopts the following recommendation of the ad hoc Application Protocols group:

Following the WG1 decision that STEP Version 1.0 must include at least one draughting related AP, the SC4 ad hoc group on APs recommends that STEP Version 1.0 should include the proposed AP #3,

"Exchange of 2D geometrically explicit CAD drawings with explicit annotation."

Proposed AP #3 is the top priority for STEP Version 1.0. The proposed APs #4, 5, 6 & 18 should be reviewed by the end of October 1990 to assess their adequacy. These APs could be included in STEP Version 1.0 if they do not require extensive SC4 resources for completion. None of these APs shall be allowed to delay the delivery of STEP Version 1.0.

NB.: PMAG must assign the responsibility for assessing the adequacy of the proposed APs to the new WG, "Qualification & Integration."

| | |
|--------|---|
| AP # 4 | Exchange of CAD drawings with reference to 3D geometry model and with explicit annotation |
| AP # 5 | Exchange of configuration controlled 3D product definition data |
| AP # 6 | Exchange of sculptured surface models |
| AP #18 | Exchange of boundary representation models |

RESOLUTION 63: (Gothenburg - June 1990)

SC4 adopts the following recommendation of the ad hoc Application Protocols group:

In order to ensure the timely delivery of APs, a project leader must be assigned for each of the APs listed in Resolution # 62. The project leaders will report directly to the PMAG.

SC4 appoints Bruno Schilli as project leader for AP #3.

SC4 appoints Steve Ryan as project leader for AP #5.

SC4 appoints Ray Goult as project leader for AP #18.

The PMAG will appoint project leaders for APs #4 and #6 as soon as possible by the PMAG, to be confirmed by SC4.

RESOLUTION 64: (Gothenburg - June 1990)

As well as the need for normative APs, SC4 recognizes that there exists an industrial requirement for additional APs to be defined outside the SC4 organization at the industry, national, or regional level. SC4 requests the PMAG to define requirements for guidelines to permit the development of APs both inside and outside SC4. Provision should also be made for the registration of APs with SC4 to ensure the consistency of related standards.

RESOLUTION 65: (Gothenburg - June 1990)

SC4 adopts the reorganization structure as proposed by the ad hoc reorganization group in Reston. The current WG1 is to be disbanded, effective at the end of the Gothenburg meeting, and its current work is to be allocated to the following new working groups:

WG3 Product Modeling
WG4 Qualification & Integration
WG5 STEP Development Methods
WG6 Conformance Testing Procedures
WG7 Implementation Specifications

RESOLUTION 66: (Gothenburg - June 1990)

SC4 thanks the WG1 convener, Mr Jerry Weiss, for his pioneering leadership and personal dedication to the STEP development over the last six years, and looks forward to his continuing support as Project Management Advisory Group convener in the future.

RESOLUTION 67: (Gothenburg - June 1990)

SC4 appoints the following working group conveners:

WG3 Product Modeling: Barbara Warthen (USA)
WG4 Qualification & Integration: Yuhwei Yang (USA)
WG5 STEP Development Methods: Bill Danner (USA)
WG6 Conformance Testing Procedures: Jon Owen (UK)
WG7 Implementation Specifications: Jan van Maanen (UK)

RESOLUTION 68: (Gothenburg - June 1990)

SC4 resolves that STEP Version 1.0 comprises the following parts:

Overview (Part 1)
Express (Part 11)

| | |
|----------------------------|------------|
| Physical File | (Part 21) |
| Conformance Testing | (Part 31) |
| Generic Product Data Model | (Part 41) |
| Shape Representation | (Part 42) |
| Presentation | (Part 46) |
| Drafting | (Part 101) |

and one or more Application Protocols as per Resolution # 62.

Additional parts may be considered for Version 1.0; however, no additional part will be included if its inclusion will result in a schedule slippage.

Moreover, if there is slippage in the adopted schedule of any part in the above list, then SC4 may vote to defer that part to a future version of STEP.

SC4 recognizes the importance of both the documentation architecture and the schema framework, and directs the PMAG to ensure their inclusion in STEP Version 1.0.

RESOLUTION 69: (Gothenburg - June 1990)

SC4 directs the project leaders who are responsible for the development of the following STEP parts to complete their documents both technically and editorially, for CD ballot by December 1990.

| | |
|----------------------|-----------|
| Overview | (Part 1) |
| Physical File | (Part 21) |
| Conformance Testing | (Part 31) |
| Shape Representation | (Part 42) |

SC4 directs the project leaders who are responsible for the development of the following STEP parts to complete their documents both technically and editorially, as early as possible in 1991 for CD ballot, completing them no later than July 1991.

| | |
|--|------------|
| Generic Product Data Model | (Part 41) |
| Presentation | (Part 46) |
| Drafting | (Part 101) |
| AP #3 (Exchange of 2D geometrically explicit CAD drawings with explicit annotation) | |

RESOLUTION 69A: (Gothenburg - June 1990)¹

The dates stated in Resolution #69 shall be reconfirmed by letter ballot by SC4 by 1 August, 1990, upon reconsideration of a schedule and plan to be submitted by the PMAG.

RESOLUTION 70: (Gothenburg - June 1990)

¹ This resolution was originally passed and designated as Resolution 70: (Gothenburg #11, June 1990). During the transition of the Secretary from one leader to the next (1995), the list of resolutions inherited by the new secretary was missing this particular resolution. As of 1997-03-18, the current secretary was given an old hard copy of early resolutions and was able to identify the dropped resolution. However, because the current numbering of resolutions has proliferated into many documents, the secretary deemed it best to insert the original resolution #70 as #69a.

SC4 directs PMAG to organize the work of the Working Groups in order to achieve the goals in Resolutions # 68 and # 69.

RESOLUTION 71: (Gothenburg - June 1990)

SC4 welcomes Part 11 EXPRESS (WG1 N496) as the first CD of the STEP work item.

RESOLUTION 72: (Gothenburg - June 1990)

Whereas the new ISO/IEC procedures in 2.4.1 allow the circulation of documents for comment or for voting by P members on their approval as Committee Drafts (CDs), CDs circulated within SC4 shall only be circulated for ballot.

RESOLUTION 73: (Gothenburg - June 1990)

SC4 moves to accept for ballot a new work item on industrial manufacturing management data (SC4 N60, submitted by France).

RESOLUTION 74: (Gothenburg - June 1990)

Terms of reference item "c" for the PMAG that is defined in SC4 Resolution # 49 shall be changed so that it shall read, "coordinate activities between Product Data Definition Working Groups and the Editing Committee."

RESOLUTION 75: (Gothenburg - June 1990)

SC4 establishes an Editing Committee to finalise the texts of the Parts of the STEP standard for submission as a Draft International Standard and maintain configuration control so that all future changes be documented and approved.

Membership of the Editing Committee is by nomination; each "P" member may nominate one representative to the Editing Committee. Additional members may be coopted in order to achieve the objectives.

The Editing Committee reports directly to SC4. Its tasks comprise:

- Collecting and registering issues resulting from ballots and reviews of STEP Parts

- Collection of comments

- Assessing of comments as technical, editorial or irrelevant

- Passing technical issues and comments to the SC4 Working Groups for technical solution

- Incorporating updates produced by the SC4 Working Groups

- Making editorial improvements to the standard

- Ensuring technical coherence among Parts of the standard

- Ensuring conformance of the standard to ISO Directives and Drafting Rules

This committee will supersede the Editing Committee established by Resolution # 18 of SC4 at the Tokyo meeting.

RESOLUTION 76: (Gothenburg - June 1990)

SC4 wishes to thank Sweden for hosting the SC4 meeting in Gothenburg.

RESOLUTION 77: (Sapporo - July 1991)

SC4 wishes to thank the conveners, project leaders and the many technical experts who have given extraordinarily of themselves during the past years in our common effort to develop STEP version one.

RESOLUTION 78: (Sapporo - July 1991)

SC4 directs all SC4 working groups to use the methodology and tools developed for STEP, unless proven not suitable.

RESOLUTION 79: (Sapporo - July 1991)

SC4 instructs PMAG to plan the application of adequate resources for integration, qualification, data interpretation and development of conformance testing material through the lifecycle of each project, as part of the project approval process.

RESOLUTION 80: (Sapporo - July 1991)

In order to facilitate the STEP development process, SC4 asks each P Member that is involved in the development of STEP application protocols and/or resource models to designate at least one representative to receive training in and to participate actively in the following:

- integration
- qualification
- editing
- interpretation
- conformance testing procedures

SC4 encourages externally funded programmes and projects to provide and/or sponsor these representatives. SC4 requests its Secretariat to invite P Members to nominate representatives to WG4 to participate in the qualification and integration of resource models and application protocols.

RESOLUTION 82: (Sapporo - July 1991)

SC4 requests PMAG to ensure the completion of an integrated set of methods and procedures for integration, qualification, data interpretation and development of abstract test suites, together with associated documentation and training materials, as soon as possible.

RESOLUTION 83: (Sapporo - July 1991)

SC4 requests its Secretariat to invite P Members to nominate representatives to WG5 to participate in the continued development of ISO 10303 methods.

RESOLUTION 84: (Sapporo - July 1991)

SC4 approves the principle of setting up formal procedures within its organisation. SC4 welcomes its Chairman's proposals for the following procedures:

1. SC4 procedures for the approval of STEP
2. responsibilities of a WG convener
3. responsibilities of a project leader
4. SC4 documentation approval levels

5. STEP part titles

SC4 directs SPAG to review these proposed documents and to analyse their consistency with respect to the SC4 methodology before SC4 approves them.

SC4 directs PMAG to assess the adequacy of the procedures against their operational requirements.

Meanwhile, and in order to fulfil the ongoing work, SC4 decides to use these new documents to approve the STEP parts, whilst SPAG solicits comments regarding their adequacy.

RESOLUTION 85: (Sapporo - July 1991)

Following the assignment of the accepted new work item on Industrial Manufacturing Management Data (N60), ISO TC184/SC4 establishes a new working group (WG8) with the following title and scope:

Title: Industrial Manufacturing Management Data

Scope: Method and development to standardise data which express information exchanged inside industrial manufacturing plants, except for product definition data

SC4 accepts the offer of the member body of France to undertake the convenership of this WG. SC4 appoints Mr. Albert Colin as convener of WG8.

RESOLUTION 86: (Sapporo - July 1991)

Following the creation of a WG8, SC4 recommends that the following three projects be part of the new work item on Industrial Manufacturing Management Data.

To develop an international standard dealing with model, form and attributes of data exchanged between an industrial manufacturing company and its environment of manufacturing management activities.

To develop an international standard dealing with model, form and attributes of data able to reside in an industrial manufacturing company's resources database.

To develop an international standard dealing with model, form and attributes of data controlling and monitoring the flow of materials within an industrial manufacturing company.

SC4 charges the WG8 convener to recommend, to the SC4 secretariat, candidates for project leaders. SC4 encourages as many experts as needed to participate in these projects. Names shall be forwarded to the SC4 secretariat by 1st September 1991.

RESOLUTION 87: (Sapporo - July 1991)

SC4 welcomes the proposal from IEC TC 3 to work jointly on the topic of electrical and electronic product data standards and establishes a joint working group (JWG9) with the following title and scope:

Title: IEC TC 3 - ISO TC184/SC4 joint working group for electrical and electronic applications of ISO 10303.

Scope: Develop resource models and application protocols using STEP methodologies taking into account documented efforts such as EDIF, IGES, SET and VNS.

SC4 offers the convenership of JWG9 to IEC. The current activities of the ISO TC184/SC4/WG3 electrical project will be transferred to JWG9.

Care must be taken to ensure that the work can continuously proceed without losing the results achieved so far.

RESOLUTION 88: (Sapporo - July 1991)

SC4 accepts as a new work item proposal the work on STEP Data Access Interface described in SC4 N71.

RESOLUTION 89: (Sapporo - July 1991)

SC4 modifies the terms of reference for the SPAG (SC4 resolution 48) as follows:

replace: "acting as a liaison with relevant bodies"

with: "acting as a strategic liaison with the relevant bodies and coordinating other liaisons at the working group level"

RESOLUTION 90: (Sapporo - July 1991)

The Strategic Planning Advisory Group is given the additional responsibility for:

Reviewing any new work item proposal to be presented to SC4.

Examining how each new work item proposal will fit within the SC4 strategic objectives and other standards work.

RESOLUTION 91: (Sapporo - July 1991)

SC4 asks that the SPAG review existing materials with the intent to select or create an enterprise taxonomy. The deliverable from this task would provide an approach for SC4 to use, as a tool, to account for and to manage the development of standards within the enterprise-data domain so that overlaps and gaps in SC4 standard coverage are identified.

RESOLUTION 92: (Sapporo - July 1991)

SC4 sends out for mail ballot the proposed strategic policy statement developed by the SPAG in document TC184/SC4/SPAG N27.

RESOLUTION 93: (Sapporo - July 1991)

SC4 appoints Mr. Jean-Pierre Letouzey as chairman of the Strategic Planning Advisory Group.

RESOLUTION 94: (Sapporo - July 1991)

SC4 appoints Mr. Jerry Weiss as chairman of the Project Management Advisory Group.

RESOLUTION 95: (Sapporo - July 1991)

SC4 moves to accept the offer of a liaison with ISO/IEC JTC1/SC21/WG3 and appoints Mr Augusto Nieva (Italy) to serve in this role.

RESOLUTION 96: (Sapporo - July 1991)

SC4 encourages and welcomes liaison with any external body which meets the ISO criteria and is developing STEP application protocols.

RESOLUTION 97: (Sapporo - July 1991)

SC4 asks all P Members to assess their national requirements for future editions of ISO 10303. An initial list is requested by 1 Oct 91 to be sent to SPAG.

RESOLUTION 98: (Sapporo - July 1991)

SC4 directs its Secretariat to establish an Editing Committee for ISO 10303 in accordance with the ISO Directives. In addition to assistance in the preparation of texts, consistent between themselves and with the ISO directives, the Editing Committee will provide review for technical coherence across texts.

The membership of the Editing Committee will comprise a chairman and all project leaders or their representatives responsible for text preparation. Each SC4 P Member may nominate additional members. Other members may be co-opted by the Chairman in order to achieve committee objectives.

This resolution supersedes SC4 Resolution #76.

SC4 directs its Secretariat to appoint Mr. Nigel Shaw as chairman of the Editing Committee for ISO 10303.

RESOLUTION 99: (Sapporo - July 1991)

It is SC4 policy that the review period for first Committee Drafts of STEP Parts should be not less than four months.

RESOLUTION 100: (Sapporo - July 1991)

SC4 wishes to thank the Japan member body and NICOGRAPH for their hospitality and for the quality of their meeting arrangements during the SC4 session in Sapporo.

RESOLUTION 100: (Oslo - February 1992) - SPAG Resolution S03

SC4 recommends the use of the term "initial release of STEP" instead of "STEP version 1".

RESOLUTION 101: (Oslo - February 1992) - SPAG Resolution S08

To fulfill objective # b6 of the SC4 Strategic Policy and to embed consistency in the SC4 procedures proposed in SC4 Resolution #84 as well as in the SC4 policies, SC4 adopts SPAG N75 as the information model of the main entities used within SC4 according to the ISO directives.

Objective #b6 reads: Assure that SC4 participants understand the basic information and methods concerning SC4 work.

RESOLUTION 102: (Oslo - February 1992) - SPAG Resolution S09

To fulfill the objective # c5 of the SC4 Strategic Policy and the SC4 Resolution #90, SC4 adopts the SPAG document N64 (version 1.6, as amended with respect to confirmation of project leaders) as the policy to manage and approve the content of the SC4 programme of work.

Objective #c5 reads: Refine the definition of present and future SC4 areas of scope, work items and projects. Identify their relationships.

RESOLUTION 103: (Oslo - February 1992) - SPAG Resolution S10

To fulfill the objective # c5 of the SC4 Strategic Policy, SC4 adopts SPAG N59 as the base line approved list of SC4 areas of scope, work items and projects existing on 1992-02-07.

Objective #c5 reads: Refine the definition of present and future SC4 areas of scope, work items and projects. Identify their relationships.

RESOLUTION 104: (Oslo - February 1992) - SPAG Resolution S11

Following SC4 Resolution #84, SC4 adopts policy #4 of SC4 document N85 on "SC4 documentation approval levels" as GP#02 to approve SC4 parts documents as well as other SC4 technical documents relevant to the SC4 standards.

RESOLUTION 105: (Oslo - February 1992) - SPAG Resolution S12

Following SC4 Resolution #84, SC4 directs its secretariat to maintain a dated list of Parts to be developed or under development for each SC4 standard and to provide these lists to members of SC4 at each meeting.

RESOLUTION 106: (Oslo - February 1992) - SPAG Resolution S13

SC4 directs its secretariat to maintain a dated list of adopted SC4 projects and of the corresponding appointed project leaders and to provide this list its members at each meeting.

RESOLUTION 107: (Oslo - February 1992) - SPAG Resolution S14

SC4 directs its secretariat to review all existing liaisons and to ensure that they have been formally registered by the Central Secretariat. Any liaisons not so registered shall be established by the Chief Executive Officer.

RESOLUTION 108: (Oslo - February 1992) - SPAG Resolution S15

SC4 directs WG8 and WG7 to review the available documents on DCG and work together to propose an expert to be appointed by SC4 to serve in the role of liaison with the DCG group.

RESOLUTION 109: (Oslo - February 1992) - SPAG Resolution S16

SC4 adopts the policy that it shall endeavor to share and coordinate resources and results with any standardization effort outside SC4 that is applicable to the SC4 scope.

RESOLUTION 110: (Oslo - February 1992) - SPAG Resolution S17

SC4 directs WG3 to propose an expert to be appointed by SC4 to liaise with the ISO TC10/SC5 in the areas of draughting and tolerances.

RESOLUTION 111: (Oslo - February 1992) - SPAG Resolution S18

SC4 directs its secretariat to draw the attention of the ISO Technical Board to apparent overlaps between the scopes of SC4 and other TCs and SCs, and to request confirmation that the scope of

SC4 covers all aspects of product data representation and exchange in digital form within its current work items.

RESOLUTION 112: (Oslo - February 1992) - SPAG Resolution S19

SC4 considers that the NWI on Software Product Data falls in the SC4 Area of Scope A on Product Data.

RESOLUTION 113: (Oslo - February 1992) (SPAG Resolution S04)

SC4 adopts the following six projects:

- P41 Mechanical Design Using Wireframe, STEP Part 206
- P42 Sheet Metal Dies and Blocks, STEP Part 207
- P43 Life Cycle Product Change Process, STEP Part 208
- P44 Electrotechnical Plants
- P45 Electronic Printed Circuit Assembly, Design and Manufacture (PWA/PWB)
- P46 Electronics Test, Diagnostics and Remanufacture (PCB/LRM)

and appoints respectively as Project Leaders for P41-P46: Jon Aas, Jack Skeels, Rick Bsharah, R. Nerke, J. Corley, and W. Russell.

RESOLUTION 114: (Oslo - February 1992)

SC4 adopts the project Design Through Analysis of Composite and Metallic Structures and appoints Mr. Keith Hunten as project leader.

RESOLUTION 115: (Oslo - February 1992) - SPAG Resolution S01

SC4 directs its secretariat to circulate SPAG document N58 and N75 for P-member comment by mid-June 1992

RESOLUTION 116: (Oslo - February 1992) - SPAG Resolution S07

With respect to the upward compatibility of EXPRESS, SC4 directs WG5 to consider the document SC4/WG2 N43 and to report to SC4 at the next plenary meeting how the WG2 requirement for Part Libraries can be satisfied.

RESOLUTION 117: (Oslo - February 1992) - PMAG Resolution P01a

SC4 accepts the plan and schedule proposed by PMAG for the registration of the initial release of STEP as DISs by 1 January 1993.

RESOLUTION 118: (Oslo - February 1992) - PMAG Resolution P01b

SC4 encourages extra national effort to support the plan for the registration of the initial release of STEP as DISs by 1 January 1993. Extra effort includes extra meetings for integration, qualification, editing and for key project persons. Extra effort also includes early return of ballot comments as shown on the PMAG schedule.

RESOLUTION 119: (Oslo - February 1992) - PMAG Resolution P02

SC4 requests position papers for consideration by PMAG on "Requirements for coordinating and qualifying APs developed externally to SC4".

RESOLUTION 120: (Oslo - February 1992)

SC4 requests P-members to consider their PMAG representative assignments to assure that nominated members and alternates are available to participate regularly;

RESOLUTION 121: (Oslo - February 1992)

A common understanding of what application protocol interoperability means has been developed in an ad hoc group between April 1991 and January 1992. Based on this information, SC4 directs its WG 4, 5, 6 & 7 to consider the development of methods and techniques to achieve application protocol interoperability and their implementation as a key priority requirement for STEP beyond the initial release.

RESOLUTION 122: (Oslo - February 1992)

SC4 instructs its Secretariat to transmit the revised final CD 10303-11 being approved for publication as ISO/DIS directly to the ISO Central Secretariat for registration and publication as a Draft International Standard without further balloting, subject to consensus on the resolution of outstanding issues. SC4 recognizes that these actions are fully in accord with clause 2.4.6 of ISO Directives Part 1 for the technical work.

RESOLUTION 123: (Oslo - February 1992)

SC4 instructs its Secretariat to transmit the revised final CD 10303-21, without further balloting subject to consensus on resolution of outstanding issues, being approved for publication as ISO/DIS directly to the ISO Central Secretariat for registration and publication as a Draft International Standard.

RESOLUTION 124: (Dallas - October 1992)

SC4 notes the consensus position reached by PMAG and WG experts on the issues relating to Initial Release implementation. This represents a solution to a number of potential ballot comments which may arise during the current CD ballot. The following represent the proposed solution:

Part 21:

ANDOR Supertype/Subtype Structures

- Instances based on AND will use external mapping.
- Other instances will use internal mapping.

Entity names within the external mapping structure will be ordered alphabetically.

Part 41:

The Measures Schema recommended by WG4 will be adopted.

Parts 42 and 46:

Other Parts will conform with the new Measures Schema.

Part 203:

Annex D of the current CD release will be removed

A new informative annex will be added (Annex J)

Text for the new informative annex should express the following consensus:

"This annex provides an example instantiation data structure that may help implementors understand how the Application Interpreted Model of Annex A might be restructured for internal implementation purposes."

"The data structure contained in this annex is not intended to be used as the required schema for the clear text encoding as defined in ISO 10303-21."

AP Guidelines and Supplementary Directives:

The informative annex (Annex J) as previously defined will be described as an optional annex for all APs.

RESOLUTION 125: (Dallas - October 1992)

SC4 confirms the CD ballot target dates for existing STEP documents. The resulting comments, will be addressed at the workshop scheduled for 14 - 18 December 1992 at NIST. SC4 instructs its secretariat to circulate the integrated set of consistent documents to P-members by 15 January 1993. The final decision to register the documents as DIS will be taken by SC4 at the Torino meeting.

RESOLUTION 126: (Dallas - October 1992)

The Initial Release of ISO 10303 shall allow referencing mechanisms to a part in a standard part library using names and attributes. Such mechanisms shall allow the exchange through a STEP file of that information which is necessary to generate the same part in the receiving system when both sending and receiving systems contain the same part library. (SPAG 9)

RESOLUTION 127: (Dallas - October 1992)

Because of the likelihood of changes required to maintain overall consistency, ISO 10303-21 will be circulated to P-members on or before 15 January 1993, so that it can be included in the final decision on the registration of the Initial Release of STEP.

RESOLUTION 128: (Dallas - October 1992) - SPAG Resolution S11

SC4 requests its secretariat to clearly and explicitly describe the expectations for the Initial Release of STEP as the basis for national bodies to prepare their own press releases.

RESOLUTION 129: (Dallas - October 1992)

SC4 directs its Working Groups WG4 and WG5 to complete all documents required for the use of the STEP methodologies, and to submit them for approval as ISO Type 3 Technical Reports.

RESOLUTION 130: (Dallas - October 1992)

SC4 requests member bodies to identify and provide qualified people with adequate long-term commitment and funding to support the critical central functions of qualification, integration, editing, training material development, training and configuration management. In addition, SC4 requests PMAG to identify to member bodies the requirements for support for these functions.

RESOLUTION 131: (Dallas - October 1992)

SC4 instructs its secretariat to send out for mail ballot the proposed strategic policy statement, developed by SPAG and WG2 in the document SPAG N104 V1.4.

RESOLUTION 132: (Dallas - October 1992)

ISO TC184/SC4 asks the ISO TC184/SC4 Secretariat to make sure that an ASCII source listing will be available, containing an explicit representation of all characters of the CD text to be balloted represented as ASCII characters, without any formatting information or figures.

A 3.5" MS-DOS disk formatted at 720 K containing a complete 7 bit ASCII text must then be an integral part of any package for which a CD ballot is requested.

RESOLUTION 133: (Dallas - October 1992)

For each STEP Part on the NIST SOLIS, ISO TC184/SC4 asks that the following forms be available, consistent and up to date:

Master copy in LaTeX or WordPerfect.

One derived copy containing a complete ASCII text of the STEP Part, containing as much text as possible.

One derived copy containing a POSTSCRIPT copy of the STEP Part, including the cover sheet.

RESOLUTION 134: (Dallas - October 1992)

SC4 asks its secretariat to register the work of WG2 with ISO as a new standards project, different from 10303.

RESOLUTION 135: (Dallas - October 1992)

SC4 requests its secretariat to ensure that the schedule for the principal meetings of the Working and Advisory Groups of SC4 shall be determined at least one year in advance of such meetings.

RESOLUTION 136: (Dallas - October 1992)

At least eight weeks prior to each meeting of TC184/SC4, a memorandum shall be sent to each "P" member country indicating all issues, documents, projects, etc. for which votes are expected at that meeting.

RESOLUTION 137: (Dallas - October 1992)

SC4 encourages WG3/T8 (Product Life Cycle Support) and WG8 (Industrial Manufacturing Management) to cover the domain of maintenance data. WG3/T8 will particularly address maintenance support data. WG8 will particularly address maintenance management data. The specific case related to diagnostics and resource status has to be solved in common. (WG3)

RESOLUTION 138: (Dallas - October 1992)

SC4 directs its Secretariat to send to the Central Secretariats of ISO and IEC, to the ISO/CEO, and to the secretariat of TC93, the memorandum SC4 N166 (SPAG N106) as a proposal of shared guidelines to be used as the basis for common agreements between ISO and IEC to achieve the cooperation required by SCIA in their decision #83.

RESOLUTION 139: (Dallas - October 1992)

SC4 directs its Secretariat to respond to the TC3 questionnaire IEC 5/1992 by sending back the SC4 terms of reference containing the updated list of projects and the programme of work of JWG9.

RESOLUTION 140: (Dallas - October 1992)

SC4 recognises the creation of IEC TC93 and desires to fully support the activities of IEC TC93 in the area of STEP AP development for design automation. SC4 appoints Mr. Fritz Reuter and Mr. Pat Harrow to represent SC4 at the first meeting of TC93 in Paris, on 29 - 30 October 1992.

RESOLUTION 141: (Dallas - October 1992)

To fulfill the objectives #c2 and c3 of the SC4 strategic policy (SC4 N128), SC4 adopts the document SC4 N165 as the policy to manage the evolution of SC4 standards and their parts. This document has been ballotted with a positive result, and comments have been reviewed and resolved.

RESOLUTION 142: (Dallas - October 1992)

SC4 directs PMAG to define the requirements for the configuration control to manage the evolution of STEP as defined in SC4 N165. SC4 directs PMAG will also define proposals of alternative procedures for meeting those requirements to fulfill the SC4 policy adopted in Resolution #141. SC4 directs PMAG to report these to SC4 at least by mid 1993 for final decision.

RESOLUTION 143: (Dallas - October 1992)

To fulfill the objective #b6 of the SC4 Strategic Policy (SC4 N128) and to embed consistency in the SC4 procedures proposed in SC4 Resolution #83, SC4 adopts the document SC4 N164 as the information model of the main elements used within SC4 according to the ISO directives.

RESOLUTION 144: (Dallas - October 1992)

SC4 directs its secretariat to circulate the working paper SPAG N93 on "Global Programming Language for Manufacturing Applications" to P-member bodies, requesting national comments, priorities, and recommendations on whether SC4 should or should not keep the area of scope within its program of work.

RESOLUTION 145: (Dallas - October 1992)

To ensure that incoherencies, gaps, and overlaps are recognized and eliminated, SC4 recognizes the need for liaison between the business information domain covered by EDIFACT and other related standards, and the technical information domain covered by SC4 standards. SC4 directs WG8 to establish liaisons between SC4 and the following bodies:

United Nations Trade Division
JTC1/WG3
JTC1/SC14

RESOLUTION 146: (Dallas - October 1992)

SC4 directs its secretariat and SPAG to examine the feasibility of organizing during 1993 appropriate mechanisms to identify and structure requirements for STEP capabilities that will be needed during the next five years.

RESOLUTION 147: (Dallas - October 1992)

To fulfill objective c1 of the SC4 strategic policy (SC4 N128), SC4 requests that the P02 (EXPRESS Language) project leader:

present to SPAG in Torino, Italy (February 1993 meeting) the status and the content of its requirement analysis for EXPRESS.

elaborate a strategy for future EXPRESS development, and to present it to SPAG for validation by July 1993. This strategy should include the context, the background, the main objectives on a mid-term and long-term basis, assessment of any alternative options, and the analysis of major risks. (SPAG 4)

RESOLUTION 148: (Dallas - October 1992)

SC4 requests the P35 project leader, Mr. Mark Palmer, along with the participation of WG4, WG5, Editing Committee, interested members of PMAG, and experts within SC4, to present their point of view and to make a proposal to SPAG and PMAG at their February 1993 meeting in Torino, Italy. The point of view and proposal will address the topics of a reference model of SC4 standards, concepts of "interoperability" and "companion standards," and requirements for coordinating and qualifying APs developed outside SC4.

RESOLUTION 149: (Dallas - October 1992)

SC4 adopts project P54 "Automotive Mechanical Design AP," and appoints Mr. Juergen Mohrmann as the project leader.

RESOLUTION 150: (Dallas - October 1992)

Following the resolution SC4 #108, SC4 appoints Mr. Albert Colin as the liaison with the ISO/TAG 7 / Data Element Coordination Group.

RESOLUTION 151: (Dallas - October 1992)

SC4 appoints Ms. Sheila Lewis (UK) as convener of WG6, in succession to Dr. Jon Owen, with the appointment to be effective upon the resignation of Dr. Owen. SC4 expresses its thanks to Dr. Owen for his efforts in developing the framework for conformance testing for STEP.

RESOLUTION 152: (Dallas - October 1992)

Following the TC184 resolution #153, SC4 appoints Mr. Rainer Glatz as liaison with TC184/WG5.

RESOLUTION 153: (Dallas - October 1992)

Following SC4 Resolution #110 (Oslo), Mr. Martin Holland is proposed by WG3 as the liaison with ISO TC10/SC5. SC4 appoints him as a liaison.

RESOLUTION 154: (Dallas - October 1992)

SC4 appoints Mr. Cliff Borchert as leader of project P29 on External Exchanges.

RESOLUTION 155: (Dallas - October 1992)

SC4 appoints Prof. Wilhelm Dangelmaier as leader of project P30 on Material Flow Control.

RESOLUTION 156: (Dallas - October 1992)

SC4 appoints Mr. Massimo Actis Dato as liaison with JTC1/SGFS

RESOLUTION 157: (Dallas - October 1992)

SC4 requests PMAG to appoint a liaison with ISO TC172/SC1 on optical systems.

RESOLUTION 158: (Dallas - October 1992)

SC4 appoints Tom Baker as liaison with ISO/IEC JTC1/SC7 on software engineering.

RESOLUTION 159: (Dallas - October 1992)

SC4 commends the Initial Release team and all the international experts who have contributed to the completion of the Parts in accordance with the schedule which was set by SC4.

RESOLUTION 160: (Dallas - October 1992)

SC4 thanks the U.S. for hosting this meeting of SC4.

RESOLUTION 161: (Turin - February 1993)

SC4 requests its Secretariat to register Parts 1, 21, 41, 42, 43, 44, 101 and 203 of ISO 10303 as Draft International Standards, following the incorporation of outstanding changes agreed at the Turin meeting.

RESOLUTION 162: (Turin - February 1993)

SC4 requests its Secretariat to register Part 46 of ISO 10303 as a Draft International Standard, subject to the following conditions being satisfied by the Project Leader:

- a. The resolution of all outstanding issues from the second CD ballot with regard to Integration, Qualification and Draughting are documented in the issues log and circulated to member bodies.
- b. The results of these resolutions are incorporated in Part 46
- c. The processes of Qualification and Editing are completed and the results incorporated in Part 46
- d. The groups responsible for Qualification, Integration and Editing and the Project Leader shall sign off the final version of the document.

Member bodies will confirm that Part 46 (WG3 N218) successfully resolves all outstanding ballot issues by the end of March 1993. The SC4 Secretariat is authorized to assume that lack of response may be interpreted as confirmation.

An electronic form of the document shall accompany the circulation.

RESOLUTION 163: (Turin - February 1993)

SC4 requests its Secretariat to register Part 201 of ISO 10303 as a Draft International Standard, subject to the following conditions being satisfied by the Project Leader:

- a. The resolution of all outstanding issues from the second CD ballot are documented in the issues log and circulated to member bodies.
- b. The results of these resolutions are incorporated in Part 201
- c. The processes of Qualification, Integration and Editing are completed and the results incorporated in Part 201
- d. The groups responsible for Qualification, Integration and Editing and the Project Leader shall sign off the final version of the document.

Member bodies will confirm that the final version of Part 201 successfully resolves all outstanding ballot issues within one month of circulation by the SC4 Secretariat. The SC4 Secretariat is authorized to assume that lack of response may be interpreted as confirmation. An electronic form of the document shall accompany the circulation.

RESOLUTION 164: (Turin - February 1993)

SC4 recognizes John Rumble and his Initial Release team for their extraordinary dedication and contribution to the success of STEP.

RESOLUTION 165: (Turin - February 1993)

SC4 resolves that, for all Part documents, the Project Leader shall confirm that the result of Qualification/Editing/Integration still meets the requirements of the project.

RESOLUTION 166: (Turin - February 1993)

SC4 approves the start of the following Application Protocol projects:

- 10303-215 Ship Arrangement
- 10303-216 Ship Moulded Forms
- 10303-217 Ship Piping
- 10303-218 Ship Structures
- 10303-219 Dimensional Inspection Process Planning

RESOLUTION 167: (Turin - February 1993)

SC4 thanks UNINFO and their staff for hosting and supporting the meeting.

RESOLUTION 168: (Berlin - October 1993)

For each STEP Application Protocol an Abstract Test Suite shall be developed to document the guidelines for testing implementations for conformance to the Application Protocol. Before an Application Protocol can be registered as a DIS, the corresponding Abstract Test Suite must at least have started its CD ballot.

RESOLUTION 169: (Berlin - October 1993)

New projects shall be established to develop Abstract Test Suites for each approved STEP Application protocol. PMAG shall name a project leader for each project and shall create a project schedule by January 1994.

RESOLUTION 170: (Berlin - October 1993)

SC4 resolves that documents may be circulated to gather comments from all member countries using the CD procedure, but the procedure for approving a document at the CD level requires a formal ballot. This supersedes resolution #73 from Gothenburg of ISO TC184/SC4 N63 dated 10 June 1990.

RESOLUTION 171: (Berlin - October 1993)

SC4 adopts project P50 "Printed Circuit Assembly Manufacturing Planning" (AP220) as part of the Work item on product data and appoints Mr Jack Corley as the project leader.

RESOLUTION 172: (Berlin - October 1993)

SC4 adopts project P49 "Functional Data and Schematic Representation for Process Plants" (AP 221) as part of the Work item on product data and appoints Mr David Leal as the project leader.

RESOLUTION 173: (Berlin - October 1993)

SC4 adopts project P51 "Exchange of Product Definition Data from Design Engineering to Manufacturing Engineering for Composite Structures" (AP 222) as part of the Work item on product data and appoints Mr Glen Ziolkowski as the project leader.

RESOLUTION 174: (Berlin - October 1993)

SC4 adopts project P52 "Exchange of Design and Manufacturing Product Information for Cast Parts" (AP 223) as part of the Work item on product data and appoints Mr Constantine Orogo as the project leader.

RESOLUTION 175: (Berlin - October 1993)

SC4 adopts project P53 "Mechanical Products Definition for Process Planning Using Form Features" (AP 224) as part of the Work item on product data and appoints Mr Len Slovensky as the project leader.

RESOLUTION 176: (Berlin - October 1993)

SC4 adopts project P54 "Structural Building Elements using Explicit Shape Representation" (AP 225) as part of the Work item on product data and appoints Dr Wolfgang Haas as the project leader.

RESOLUTION 177: (Berlin - October 1993)

SC4 approves the principle of separate publication of ISO 10303-22 language bindings, such as late FORTRAN, late C and early C++, and directs PMAG to allocate part numbers as required, on the advice of the Editing Committee.

RESOLUTION 178: (Berlin - October 1993)

SC4 requests its Secretariat to circulate document N230 (SPAG N110 V 1.5) to its member bodies for comment.

RESOLUTION 179: (Berlin - October 1993)

SC4 directs SPAG to establish and maintain an SC4 Strategic Policy Reference Guide and welcomes the proposition of SPAG to make tutorial seminars on the SC4 strategic policy.

RESOLUTION 180: (Berlin - October 1993)

SC4 adopts document N231 (SPAG N111 V 1.2) as its strategic policy for liaisons.

RESOLUTION 181: (Berlin - October 1993)

SC4 appoints Mr Neal Laurance as Convener of PMAG, and records its appreciation to Mr Jerry Weiss for his efforts in the project since its launch.

RESOLUTION 182: (Berlin - October 1993)

SC4 accepts in principle that all Parts of ISO 10303 shall be published as joint ISO/IEC standards, and directs its Secretariat to work with the ISO Central Secretariat and the SC4 Editing Committee to confirm that this may take place without delay of more than two months in their publication as International Standards.

RESOLUTION 183: (Berlin - October 1993)

SC4 directs Working Group 6 to develop Abstract Test Methods to be used in assessing conformance of implementations using ISO 10303-22.

RESOLUTION 184: (Berlin - October 1993)

SC4 requests its Secretariat to provide meeting reports, including resolutions, for distribution to member bodies within 6 weeks of each meeting of SC4.

RESOLUTION 185: (Berlin - October 1993)

SC4 requests its Secretariat to take into account those Resolutions of ISO TC184 concerning the work of SC4.

RESOLUTION 186: (Berlin - October 1993)

SC4 endorses the creation of an ad hoc group at the SC4 level to address how to proceed with parametric capabilities for all SC4 areas of scope. SC4 endorses P. Boutinaud and H. Scheder as co-chairs of this group. The ad hoc group is requested to provide its recommendations to the next meeting of SC4.

RESOLUTION 187: (Berlin - October 1993)

SC4 requests its P-members, and the conveners of Working Groups to nominate experts as participants in the ad hoc group on parametrics.

RESOLUTION 188: (Berlin - October 1993)

SC4 appoints Mr Adam Polly as project leader of project P39 (WI 1-wg4-p2.2) on STEP resource model integration and thanks Mrs Yuhwei Yang for her contribution to SC4/P39.

RESOLUTION 189: (Berlin - October 1993)

SC4 appoints Mrs Yuhwei Yang as project leader of project P40 (WI1-wg4-p6.2) on STEP application protocol integration and thanks Mr Steve Ryan for his contribution to SC4/P40.

RESOLUTION 190: (Berlin - October 1993)

SC4 appoints Mr Bernd Ingenbleek as project leader of project P18 on Part 201 Application protocol: Explicit draughting, and thanks Mr Peter Kruse for his contribution to SC4/P18.

RESOLUTION 191: (Berlin - October 1993)

SC4 thanks Barbara Warthen for her efforts in initiating and supporting this work on parametrics.

RESOLUTION 192: (Berlin - October 1993)

SC4 directs PMAG to ensure that, at that point in time when PMAG is required to vote on any Part promotion which is CD or DIS promotion, the information about sign-offs having occurred earlier is available to the PMAG national representatives in an explicit form. This information shall indicate:

1. The person having signed off.
2. The committee for which the person has signed off.
3. The identifying N number of the document having been actually signed.
4. The issue date of that document version.
5. The date of signature.

RESOLUTION 193: (Berlin - October 1993)

SC4 asks PMAG to answer the following questions regarding AICs:

1. What is the role of AICs in STEP ?
2. Who are the users of AICs ?
3. Is there a requirement for AICs to become standards ?
4. If (3) is answered positively: what are the expected criteria for them to be approved or disapproved by national member bodies ?
5. Is planning of AICs required as part of an AP Planning Project ?

RESOLUTION 194: (Berlin - October 1993)

SC4 thanks DIN and ProSTEP for hosting and supporting the meeting in Berlin.

RESOLUTION 195: (Davos - May 1994)

SC4 directs its Secretariat to incorporate the corrections developed in response to ballots on Parts 1, 11, 21, 31, 41, 42, 43, 44, 46, 101, 201 and 203.

In these documents, only changes of the following nature may be included:

- spelling corrections;
- changes to correct English grammar;
- changes to match ISO wording requirements;
- changes to ensure overall consistency so long as they correspond to ballot comments and introduce no new functionality.

Modified documents will be made available on SOLIS when the updates have been completed, in order to allow confirmation that the agreed edits have successfully been incorporated; this is not a reballot process;

Upon completion of the above process, SC4 further directs its Secretariat to send the resulting documents to Geneva, no later than 1st September 1994, for publication as International Standards.

RESOLUTION 196: (Davos - May 1994)

If any of the documents have not been received by the SC4 Secretariat by 1 September 1994, SC4 asks its Secretariat to submit the complete Initial Release DIS version of ISO 10303 to the ISO Central Secretariat for publication.

RESOLUTION 197: (Davos - May 1994)

In reference to resolutions 78, 82, 129 and 130, SC4 wishes to reiterate its concern for the documentation of methods and procedures. SC4 does not authorise the use or development of methods and procedures other than those used to develop the STEP Initial Release, until the methods and procedures for the Initial Release are documented and accepted by PMAG and SC4.

RESOLUTION 198: (Davos - May 1994)

SC4 directs the WG8 Convener and the WG8 P1 Project Leader, to perform a feasibility study to demonstrate how a data modelling methodology can be used in the EDI domain. This study will use STEP and MANDATE approaches as far as possible. A final report is expected to be delivered during the next TC184/SC4 plenary meeting.

RESOLUTION 199: (Davos - May 1994)

SC4 encourages the WG8 Convener to research with the bodies developing EDIFACT message models, the suitable material for manufacturing management requirements. If it is not possible to find such material, TC184/SC4/WG8 should propose a new work item for developing a standard, refining the needed messages, preferably in accordance with the EDIFACT organisation.

RESOLUTION 200: (Davos - May 1994)

SC4 instructs its Secretariat to circulate a new work item ballot on parametrics to pursue the goals, activities and workplan presented in the document TC184/SC4/WG3 N318.

NOTE: include recommendation of Roberto Greening as Project Leader in the NWI ballot papers.

RESOLUTION 201: (Davos - May 1994)

SC4 directs PMAG to recommend a solution for the interoperability of application protocols and circulate it to P-members before the end of 1994.

RESOLUTION 202: (Davos - May 1994)

SC4 directs AP projects for Parts 201 and 203 to deliver their respective Abstract Test Suites as Committee Drafts as soon as possible and not later than March 1995.

RESOLUTION 203: (Davos - May 1994)

SC4 requests PMAG to organise an expert review of the technical lessons learned from the Initial Release of STEP, particularly with respect to the current architecture, methods and practices. The group shall make recommendations to SC4 on methods and frameworks used in the standard to support future development. The expert group shall include, but not be limited to, one representative from each of the SC4 working groups.

RESOLUTION 204: (Davos - May 1994)

SC4 requests its Secretariat to organise a review of organisational issues and to make recommendations to SC4 at its next meeting.

RESOLUTION 205: (Davos - May 1994)

SC4 affirms that the EXPRESS language (ISO 10303-11) should be flexible enough to support the specification of data models regardless of the application area.

Requirements for the extension of EXPRESS resulting from this objective can be brought forward from other International Standardization bodies, National Standards bodies, and other such public agencies that develop and promulgate standards such as industry associations.

While inputs from private organizations are welcome, no special priority is given to their requirements.

It is recognized that requirements for the EXPRESS language that go beyond those supporting SC4 projects may require additional resources before resolution is possible.

RESOLUTION 206: (Davos - May 1994)

SC4 approves the new AP project, Plant Spatial Configuration (ISO TC184/SC4 PMAG N130) with the understanding that it will be closely coordinated with AP 221.
SC4 appoints Jack Skeels as Project Leader.

NOTE: Six countries indicated their intent to actively participate in this project; FR, DE, JP, NL, UK & US.

RESOLUTION 207: (Davos - May 1994)

SC4 appoints Dr James Fulton as liaison to ISO/IEC JTC1/SC7/WG11.

RESOLUTION 208: (Davos - May 1994)

SC4 approves the new AP proposal, TC184/SC4 PMAG N122, Ship Mechanical Systems Application Protocol, and names Jerry Goodwin as the Project Leader.

RESOLUTION 209: (Davos - May 1994)

SC4 EXPRESSES its thanks to Mr Bill Danner for his efforts as the WG5 Convener in developing the STEP Development Methods and especially for the development of the EXPRESS language.

RESOLUTION 210: (Davos - May 1994)

SC4 wishes to thank the Swiss member body for its hospitality and the excellent facilities and support at the May 1994 SC4 and Working Group meetings in Davos.

RESOLUTION 211: (Greenville - October 1994)

SC4 cancellation of a project shall become effective four months after date of action unless a project leader and resources are brought forth to the Secretariat in conformance with ISO new work item procedures.

RESOLUTION 212: (Greenville - October 1994)

SC4 agrees to cancel project 16, Integrated Generic Resources on Form Features 10303-48, due to lack of activity.

RESOLUTION 213: (Greenville - October 1994)

SC4 agrees to cancel project 60, Application Protocol on Dimensional Inspection Process Planning for Coordinate Measuring Machines 10303-219, and its corresponding ATS, 10303-1219, due to lack of activity.

RESOLUTION 214: (Greenville - October 1994)

SC4 agrees to cancel projects 41 and 73, Application Protocol on Mechanical Design Using Wireframe Representation, 10303-206, and its corresponding ATS, 10303-1206, due to lack of activity.

RESOLUTION 215: (Greenville - October 1994)

SC4 directs its Secretariat to add to its program of work a project titled "Revision to the EXPRESS Language Reference Manual ISO 10303-11". Further, SC4 confirms Dr. Phil Spiby as Project Leader. PMAG notes that this project was approved by PMAG at the Atlanta meeting.

In order to gain broad awareness and participation in this project, SC4 directs the Project Leader to prepare a formal scope statement for the project (similar to the one on the New Work Item form) and a full list of requirements for the revision, to be delivered to the Secretariat by January 1995 for circulation to all SC4 Members and organizations in liaison with SC4.

RESOLUTION 216: (Greenville - October 1994)

ISO TC184/SC4 recognizes the need to promote the introduction of STEP into industry by providing an organizational framework that supports:

- an information exchange platform for implementors of STEP regarding clarification of questions arising during implementation

- evaluation of proposed solutions to problems taking into account the STEP standard user needs and implementation practicality

- endorsement of a selected solution which is to be used in the implementation

SC4 requests all member bodies to investigate possible remedies to this need. The workshop concept established in the OSI-MMS environment for this purpose shall be taken into account. Member bodies are expected to provide a written position paper to the SC4 Chairman by February 15, 1995, and the collection of positions will be distributed to SC4 members by the Secretariat.

RESOLUTION 217: (Greenville - October 1994)

SC4 establishes a new working group to resolve the technical direction and related technical issues of SC4 so that the results are consistent with the SC4 vision and acceptable to SC4 as a whole.

The objective is to define and maintain a consistent set of architectures for the standards within SC4.

The principal deliverable of the working group is a standard or set of standards that document the architectures and the corresponding framework for methods.

Membership in this working group shall be limited. National bodies are asked to nominate members to the WG based on the desire to limit membership, the ability to carry out these terms of reference, and the need to include representatives from all areas of work within SC4. It is also considered important that the members of the WG shall also be members of other working groups.

The terms of reference for the group are to:

- provide technical leadership across the standards under SC4;

- collect, evaluate and respond to issues raised against the architectures and the corresponding methods;

- review, at intervals not exceeding three years, the suitability of the architecture against current progress and future requirements;

identify and implement necessary changes and enhancements to the architectures.

Consideration shall be given to:

other appropriate standards architecture;

existing work in the global research and development community;

prior work within SC4;

requirements for input from all existing work groups.

SC4 requests P Members to recommend experts and their candidate for Convener of this new WG by 24 November. In making their recommendations, P Members are also encouraged to provide suggestions for membership from other nations.

RESOLUTION 218: (Greenville - October 1994)

SC4 approves SC4 N230, Requirements for Future Capabilities of SC4 Standards, and requests that PMAG map it into an operational plan of operations.

RESOLUTION 219: (Greenville - October 1994)

SC4 directs its Secretariat to set up a quality assurance system within the SC4 organization according to TC184/SC4 document N230, Requirements for Future Capabilities of SC4 standards, objective C14: "Establish and implement a quality system for SC4 standards."

RESOLUTION 220: (Greenville - October 1994)

SC4 approves SC4 N242, WG2 Strategic Policy Statement.

RESOLUTION 221: (Greenville - October 1994)

SC4 approves the requirement for an SC4 strategic policy on Application Protocols as set forth in the following SPAG document N124 "Requirements for a SC4 Strategic Policy on ", Application Protocols" dated 10/20/94.

RESOLUTION 222: (Greenville - October 1994)

SC4 directs the Architecture WG to propose realistic strategic policy alternative solutions to the requirements defined in SPAG document N124.

RESOLUTION 223: (Greenville - October 1994)

The SC4 Secretariat shall distribute, at least six weeks prior to each SC4 meeting, a report on the status of SC4 projects. This report shall have the following attributes:

A summary sheet showing summary status of each project. This will include a short description; significant changes to a project; and, if a project is not progressing, an indication of the problems and/or barriers to progress.

Detailed project descriptions about the above problem projects. This will include participants lists, and project status in ballot process.

The NIPDE Electronic Library project information on STEP parts and APs will be reviewed by P members to ascertain if its information content is proper to contain the information needed.

RESOLUTION 224: (Greenville - October 1994)

SC4 expresses its desire to establish a Category A liaison with the ProSTEP Association.

RESOLUTION 225: (Greenville - October 1994)

SC4 directs its Secretariat to amend its approval procedures for advancing an application protocol to CD stage to include providing evidence of substantive international review of the ARM and the Scope of the document. This evidence is in addition to the present requirements of approval by Qualification and Integration.

RESOLUTION 226: (Greenville - October 1994)

SC4 directs its Secretariat to amend its approval procedures for registering an application protocol that has successfully passed the CD enquiry to include providing evidence of validation through some form of implementation of the application protocol as amended following ballot resolution. This evidence is in addition to the present requirements of approval by Qualification, Integration and Editing.

RESOLUTION 227: (Greenville - October 1994)

SC4 directs WG6 to complete Parts 33 and 34 and to submit them, before January 1995, for QIE approvals prior to CD ballot. SC4 directs the projects responsible for Abstract Test Suites ATS-1201, ATS-1203 and ATS-1207, to complete their documents and to submit them, before February 1995, for QIE approvals prior to CD ballot.

SC4 directs its Secretariat that Application Protocols submitted for DIS ballot prior to August 1995 shall submit the Abstract Test Suite for CD review no later than three months after the start of the DIS ballot of the Application Protocol.

RESOLUTION 228: (Greenville - October 1994)

SC4 appoints Neal Laurance as a physical liaison to ISO TC184/SC5.

RESOLUTION 229: (Greenville - October 1994)

SC4 expresses its desire to establish a liaison with ISO/IEC JTC1/SC21/WG3/CSMF.

RESOLUTION 230: (Greenville - October 1994)

SC4 expresses its sincere thanks to its Chairman, Bradford Smith, to the team at NIST, and to all those who contributed to the on-time delivery of the Initial Release of STEP to Geneva for publication.

RESOLUTION 231: (Sydney - March 1995)

SC4 establishes a Policy and Planning Committee to become the single advisory group to assist the SC4 Chairman, Committee, Conveners and Project Leaders:

To facilitate the smooth running of the organisation, including a leading role in conflict resolution between WGs, monitoring progress in critical issues and ensuring effective communication across the organisation.

To complete the development of the SC4 Organisation Handbook by 15 July 1995.

To monitor the effectiveness of the organisation and to make recommendations to the SC4 chairman on improvements to the organisation and its processes and procedures as defined in the SC4 Organisation Handbook.

In promoting the work and results of SC4.

In strategic and tactical planning, including resource planning

The PPC shall not only provide advice in response to formally submitted requests but also operate meetings to address specific issues.

The PPC members shall act as "Ombudsmen", providing a focus for issues relating to the organisation, process and procedure. PPC members shall endeavour to resolve such issues by communicating with those involved, referring the issue to SC4 only when settlement is not possible.

The PPC should establish an electronic capability for virtual meetings that can be proactive and reactive to expressed needs within two weeks.

RESOLUTION 232: (Sydney - March 1995)

SC4 appoints Mr. Julian Fowler as the convener of Working Group 10, Technical Architecture

RESOLUTION 233: (Sydney - March 1995)

SC4 appoints Bernd Wenzel as deputy convener for Working Group 10 on architecture.

RESOLUTION 234: (Sydney - March 1995)

For the new work item for Amendment 1 to 10303-1, SC4 appoints Howard Mason project leader.

RESOLUTION 235: (Sydney - March 1995)

For the new work item STEP Development Methods, SC4 appoints Julian Fowler project leader and assigns this project to WG10. The WG5 Project 2 is transferred to WG10 to support this project.

RESOLUTION 236: (Sydney - March 1995)

For the new work item STEP Building Construction Core Model, SC4 appoints Jeff Wix project leader and assigns this project to WG3.

RESOLUTION 237: (Sydney - March 1995)

For the new work item Building Services, Heating, Ventilation and AC, SC4 appoints Patrice Poyet project leader and assigns this project to WG3.

RESOLUTION 238: (Sydney - March 1995)

For the new work item Building Structural Frame, SC4 appoints Alistair Watson project leader and assigns this project to WG3.

RESOLUTION 239: (Sydney - March 1995)

SC4 requests its parent committee to revise the title of ISO TC184/SC4 from Industrial Data and Global Manufacturing Programming Languages to Industrial Data.

RESOLUTION 241: (Sydney - March 1995)

SC4 expresses its desire to establish a Category A liaison with ISO TC211 on Geographic Information Systems and appoints Barbara Warthen as that liaison to actively manage information flow between the two committees.

RESOLUTION 242: (Sydney - March 1995)

SC4 expresses its desire to establish a Category A liaison with EPISTLE.

RESOLUTION 243: (Sydney - March 1995)

SC4 wishes to give its unanimous thanks to John Mitchell, and to the following members of Standards Australia: Brigitte Catteau, David Bruce-Steer, Rhonda Putman, Rosie Sabadina, Betty Titcombe, Linda Young, Cheryl O'Neill and Katalin Veres, for the wonderful staff support and the excellent meeting facilities. SC4 members both at the meeting and from various countries on the Internet also wish to thank Dick Wittenoom from AusSTEP Consultants for providing computer support and SC4's first use of meeting Web pages.

RESOLUTION 244: (Grenoble - October 1995)

SC4 endorses the Secretariat's nomination of Richard R. Wandmacher to fill the position as Chairman of SC4 for a term of six years and requests the Secretariat to forward the nomination to AFNOR for approval by TC184.

RESOLUTION 245: (Grenoble - October 1995)

SC4 adopts the Technical Corrigendum to ISO 10303-21 dated 7 September 1995 and directs the SC4 Secretariat to forward the document to ISO Geneva.

RESOLUTION 246: (Grenoble - October 1995)

SC4 agrees to cancel project #24, 10303-103: Electrical/Electronics Connectivity, due to lack of activity.

RESOLUTION 247: (Grenoble - October 1995)

SC4 agrees to cancel project # 4, 10303-25: FORTRAN Language Binding to the SDAI, due to lack of activity.

RESOLUTION 248: (Grenoble - October 1995)

SC4 requests its Secretariat to ensure that if any AIC drafts are recommended for promotion to DIS under current ballot (N315-N332, Parts 501-518) the parts will incorporate agreed changes in response to technical comments received with the ballot prior to DIS balloting.

RESOLUTION 249: (Grenoble - October 1995)

SC4 disbands its Strategic Planning Advisory Group and thanks Jean-Pierre Letouzey for his service as Convener.

RESOLUTION 250: (Grenoble - October 1995)

SC4 disbands its Project Management Advisory Group and thanks Neal Laurance for his service as Convener.

RESOLUTION 251: (Grenoble - October 1995)

SC4 appoints Shaun Devlin as Convener of JWG9.

RESOLUTION 252: (Grenoble - October 1995)

SC4 accepts the report of its Policy and Planning Committee. SC4 requests its Secretariat to circulate the attached resolution for letter ballot to SC4 members, and to issue a simultaneous call for a Convener of the proposed new Working Group, experts for this Working Group, a chair of the proposed new Quality Committee and experts for this committee.

RESOLUTION 253: (Grenoble - October 1995)

SC4 requests its Secretariat to register the current ISO 10303-22 document as a Draft International Standard.

RESOLUTION 254: (Grenoble - October 1995)

SC4 expresses its desire to establish a Category A liaison with TC8 on Ships and Marine Technology and appoints Zabi Bazari (Lloyd Register of Shipping) as that liaison.

RESOLUTION 255: (Grenoble - October 1995)

SC4 thanks the French national Body for hosting the meetings of SC4 and its Working Groups on this occasion and wishes particularly to thank the staff of AFNOR, Sylvie Arbouy, Veronique Auger, and Ives Dudognon for their efforts.

RESOLUTION 256: (Grenoble - October 1995)

SC4 wishes to warmly and enthusiastically thank Brad Smith for his twelve years of service to SC4 and for his personal contribution to our continuing success.

RESOLUTION 257: (Kobe June 1996)

SC4 reconfirms resolution #168 but approves exempting 10303-210, 10303-224, and 10303-225 from the associated abstract test suite requirements of SC4 Resolution #168 for these APs' initial DIS registration and ballot cycle if before 31 July 1996:

- (a) the CD ballot comments are resolved;
- (b) the DIS draft is approved by integration, qualification, and editing; and
- (c) the issues resolution log and draft AP for DIS registration are successfully loaded on SOLIS, with a production-ready hard copy of both documents to the SC4 Secretary.

Compliance to SC4 Resolution #168 is expected if an AP project team is unable to meet (a) through (c) by 31 July 1996. The requirements of abstract test suites will be enforced before FDIS.

RESOLUTION 258: (Kobe June 1996)

SC4 notes the following technical SEDS reports as found in SC4 N 441, for incorporating into the affected part of ISO 10303:

10303-203: Reports 1,3,4, and 6
10303-42 & 10303-43: Report 5
10303-42 & 10303-203: Report 8
10303-11: Reports 13, 14, 16, 29, 31, and 33.

SC4 requests the SC4 Secretariat ensure these reports are made publicly available on SOLIS, andn incorporated into technical corrigenda, amendments, or new editions when appropriate.

RESOLUTION 259: (Kobe June 1996)

SC4 notes the SEDS Coordinator and SC4 Secretariat's decision that the following SEDS reports found in SC4 N 441 are editorial in nature and can be processed accordingly: SEDS Reports 2, 7, 9, 11, 38, 39, 40-43, 45, 48, 49, 67. SC4 requests the SC4 Secretariat ensure these reports are made publicly available on SOLIS, and incorporated into technical corrigenda, amendments, or new editions when appropriate.

RESOLUTION 260: (Kobe June 1996)

SC4 accepts with regret the resignation of Yuhwei Yang, Sheila Lewis, and Albert Colin as Convener of WG4, WG6, and WG8 respectively. The Committee wishes to thank Yuhwei Yang, Sheila Lewis, Albert Colin, Jan van Maanen, and Nigel Shaw for their leadership and personal dedication in the SC4 standards development effort over the last decade, and encourages their continuing support of the SC4 work.

RESOLUTION 261: (Kobe June 1996)

SC4 approves the list of project leaders and endorses the list of editors for the SC4 work effort as found in SC4 N439.

RESOLUTION 262: (Kobe June 1996)

SC4 approves forwarding 10303-225 for Draft International Standard registration upon meeting all requirements established by the ISO Directives and other SC4 resolutions.

RESOLUTION 263: (Kobe June 1996)

SC4 agrees to cancel project #27, 10303-102, "Integrated application resources: Ship structures " due to lack of activity.

RESOLUTION 264: (Kobe June 1996)

SC4 agrees to cancel project # 132, 10303-516, "Application interpreted construct: Mechanical design context" as recommended by NWI/CD ballot comments.

RESOLUTION 265: (Kobe June 1996)

SC4 approves the publication of 10303-12 as a Technical Report Type II and requests the SC4 Secretariat take appropriate action for its publication and dissemination.

RESOLUTION 266: (Kobe June 1996)

SC4 recognizes and supports the efforts of the STEP implementors to collaborate on implementation issues, and encourages the implementors to continue to hold meetings in parallel to SC4 Working Group meetings.

RESOLUTION 267: (Kobe June 1996)

SC4 requires that, unless a P-member expressly requests in writing an exemption from the SC4 Secretary, all ballot comments shall be provided in, at minimum, ASCII format along with a backup hard copy. Distribution by the SC4 Secretariat of ballot comments and general SC4 correspondence shall be by 3.5" disk, providing the original format, PostScript, and ASCII files for each SC4 document.

RESOLUTION 268: (Kobe June 1996)

SC4 accepts ISO TC 184/SC4 N438 as the prescribed guidelines when assessing fees for SC4-related meetings, and requests the SC4 Secretary forward these guidelines to ISO for the Secretary-General's approval as required by ISO Technical Management Board resolution 39/1995.

RESOLUTION 269: (Kobe June 1996)

SC4 approves the changes to the SC4 Organisation Handbook, SC4 N445, and requests the SC4 Secretariat take appropriate action to publish and disseminate the revised Handbook. Any further changes to the Handbook will be undertaken using the procedures in Section 5.11 of the Handbook.

RESOLUTION 270: (Kobe June 1996)

SC4 resolves to establish a Change Management Advisory function. SC4 further requests the SC4 Chairman to work with the PPC to present appropriate changes to the SC4 handbook to reflect the task of the Change Management Advisory function for Handbook ratification at the next SC4 meeting.

RESOLUTION 271: (Kobe June 1996)

SC4 methods documents from SC4 working groups and committees will be published as SC4 standing documents which will provide methods and procedures for SC4 to carry out its standards development more effectively within SC4.

Copies of the proposed Standing Document will be circulated for ballot to P-members for a three month ballot. Approval of the proposed document shall be based on the procedures for a Committee Draft Document.

Any comments provided with a yes vote will be considered for making improvements to the document, but the vote will be considered as in favor of making the document operative as an SC4 Standing Document.

Any no vote must be accompanied by specific comments.

Changes to standing documents will be recommended by the working group or committee responsible. Changes will be made by providing a new version of the page containing the changes to the SC4 Secretary for approval at the next SC4 meeting.

Each Standing Document shall contain an annex Revision History Table indicating the Section or page change and the date accepted by SC4 and a list of those SC4 parts expressly exempt from the revision as approved.

RESOLUTION 272: (Kobe June 1996)

SC4 resolves to establish a new Working Group 12, SC4 Common Resources. Responsibility for the Application Interpreted Constructs is assigned to this working Group. The Secretariat shall act as the Convener of this Working Group until nominations for convener can be solicited from the P-members and a selection by the Chair and Secretariat ratified by SC4.

The nominated convener will prepare a proposal for the next SC4 meeting to identify which other existing SC4 Projects should be transferred to the new working group along with the timetable for such transfer. This proposal should recognize that resources for many of the common resources are currently involved in developing specific application protocols. The proposal should identify resources that will be available for work on the common resources and identify needed resources so that a call for experts can be initiated.

The task of this Working Group will be:

- Provide for the extension of existing common resources

- Ensure dynamic consistency between resource types
- When authorized by SC4, create or enhance specific resources based on the requirements of
 - (a) All SC4 Standards
 - (b) Integration requirements
 - (c) Requirements established by WG10
 - (d) Requirements established by the Quality Committee
- Propose new work items for completion in the area of common resources to SC4
- Establish Liaison with other standards activities working on information models useful as common resources for SC4.

RESOLUTION 273: (Kobe June 1996)

SC4 appoints Mr. Jean-Jacques Michel as convener of WG8, Manufacturing Management Data.

RESOLUTION 274: (Kobe June 1996)

SC4 appoints Allison Barnard Feeney as Convener of the Quality Committee.

RESOLUTION 275: (Kobe June 1996)

SC4 appoints Christophe Viel as Convener of WG11, “EXPRESS Language, Implementation Methods, and Conformance Methods”.

RESOLUTION 276: (Kobe June 1996)

SC4 appoints David Price as Deputy Convener of WG11, “EXPRESS Language, Implementation Methods, and Conformance Methods”.

RESOLUTION 277: (Kobe June 1996)

SC4 directs WG11 to create an ad-hoc group to investigate the technical changes to parts 10303-11, 12, 21, and any other 10303 parts to allow the use of multi-language character sets, and to prepare new work item proposals to address this requirement.

SC4 nominates Neal Laurance to lead that group.

RESOLUTION 278: (Kobe June 1996)

The development of ATS is of the utmost importance in accelerating the availability of high quality commercial AP implementations. So that information and experience of ATS usage in practice may be gathered, SC4 resolution #168 is superseded by requiring that all Abstract Test Suites be advanced as Type 2 Technical Reports. Before an Application Protocol can be registered as an FDIS, the corresponding ATS must have started its ballot as a Type 2 Technical Report. The SC4 Secretary and Chair are asked to identify the responsible projects within SC4 and task them to establish the metrics for determining when the ATS Technical Report is adequate.

RESOLUTION 279: (Kobe June 1996)

SC4 strongly recommends that all P-members and A-liaisons have internet capability to send and receive ISO TC184/SC4 documents by 1997-6-1.

RESOLUTION 280: (Kobe June 1996)

SC4 appoints the JWG9 Convener, Shaun Devlin, as a participating liaison to IEC TC 93.

RESOLUTION 281: (Kobe June 1996)

TC 184/SC4 requests TC93 to designate a liaison on electronic design automation to JWG9 who can participate in the planning and technical meetings of JWG9.

RESOLUTION 282: (Kobe June 1996)

SC4 accepts the request for an A-liaison from NATO and requests its Secretariat to assist the NATO CALS Office to establish the liaison through the normal procedures.

RESOLUTION 283: (Kobe June 1996)

SC4 recognises the importance of the planned workshop on standards for the use of models that define the data and processes of information, and nominates the following delegates:

Guy Pierra to represent WG2

Julian Fowler to represent WG10

Phil Spiby to represent WG11, using the invitation to SC4

RESOLUTION 284: (Kobe June 1996)

SC4:

- welcomes the efforts by the Advisory Committee on Electronics and Telecommunications (ACET) to coordinate relevant activities across IEC
- recognises the strong industrial demand for integration between standards relating to mechanical and electrotechnical product model data
- emphasises the need for a joint ISO/IEC approach to this issue, drawing attention to the previous SC4 resolutions on the topic (Resolutions 138, 140 - October 1992)
- expresses its willingness to contribute to the proposed Harmonisation Group, and nominates Shaun Devlin (Convener of JWG9) as the principal point of contact for SC4
- encourages the ISO TMB to recognise the Design Automation Harmonisation Group (DAHG) activity as a joint ISO/IEC activity.

RESOLUTION 285: (Kobe June 1996)

SC4 requests its secretariat to circulate a letter to P-members inviting nominations for each of the following liaisons :

JTC1/SC21/WG3, JTC1/SC21/WG7, JTC1/SC21/WG11, JTC1/SC24, ISO TC 29, ISO TC 176, ISO TC 213, Joint ISO-IEC-UN/ECE Coordination Committee on EDI

SC4 requests its Secretariat to establish the corresponding liaisons where they do not already exist.

RESOLUTION 286: (Kobe June 1996)

SC4 resolves that

- an AIC shall be published as a separate part (500-series document)
- APs shall reference AICs only as a normative reference
- AICs shall be at the same or advanced voting status as an AP in which it is being used at the time of the AP's DIS or FDIS ballot.

SC4 authorises exemption for 10303-202 and 10303-207, recognising the current ballot status of these documents.

RESOLUTION 287: (Kobe June 1996)

SC4 directs WG10 to investigate the use of fully attributed EXPRESS ARMs and report to SC4 at its next meeting.

RESOLUTION 288: (Kobe June 1996)

SC4 authorises preparatory (Stage 0) work on an EXPRESS mapping language and assigns Martin Hardwick as project leader.

RESOLUTION 289: (Kobe June 1996)

SC4 wishes to thank the Japan STEP Promotion Center and Japan Information Processing Development Center for their gracious hospitality in hosting this week's SC4 Working Group and SC4 meetings. Particular recognition for their dedicated support goes to Chie Kouchi, Junko Ito, Mina Miake, and Michiyo Kuwahara.

RESOLUTION 290: (Toronto 1996-10)

SC4 approves the following new project leaders and/or project editors for the associated SC4 projects:

| ISO Project # | Project Lead | Document Editor |
|----------------------|---------------------|------------------------|
| 10303-45 | Joseph Carpenter | Robert Swindells |
| 10303-47 | Bill Anderson | Bill Anderson |
| 10303-202 | Linas Polikaitis | Kevin Freund |
| 10303-205 | Jon Owen | Jon Owen |
| 10303-207 | Charles Cederman | |
| 10303-215 | Peter Lazo | John Kendall |
| 10303-221 | Jeroen Kingma | David Leal |
| 10303-222 | Floyd Ganus | Floyd Ganus |
| 10303-223 | | Ching-Yang Wang |
| 10303-229 | | Ching-Yang Wang |
| 10303-232 | Glen Ziolk | |
| 10303-305 | Jon Owen | Jon Owen |
| 10303-318 | | Yuanxie Janke-Zhao |
| 10303-323 | Gerald Radack | Ching-Yang Wang |
| 10303-329 | | Ching-Wang Yang |
| 10303-332 | Glen Ziolk | |
| 13584-102 | Robert Schuler | |
| 14959 | Michael Pratt | Dick Wittenoom |

RESOLUTION 291: (Toronto 1996-10)

SC4 endorses the Petrotechnical Open Software Corporation (POSC) as an A-liaison to ISO TC 184/SC4.

RESOLUTION 292: (Toronto 1996-10)

SC4 authorises a temporary action to allow operation of the Quality Committee as outlined in TC 184/ SC4 N483 (Rev 1) until the new pages are adopted by letter ballot.

RESOLUTION 293: (Toronto 1996-10)

SC4 approves replacing the following text in the SC4 Organization Handbook, Clause 5.7.3.2:

"...Copies of Last-Day Resolution Papers must be handed to the meeting desk by 15.00 in order to be available for pick-up by delegation leaders at 17.00 on the day preceding the start of the SC4 meeting."

with:

"Copies of Last-Day Resolution Papers must be handed to the SC4 Secretary or meeting desk by 10.30 in order to be available for pick-up by delegation leaders at 15.30 on the day preceding the start of the SC4 meeting. A camera-ready hard copy and digital ASCII file shall be provided by the originating national body or convener."

RESOLUTION 294: (Toronto 1996-10)

SC4 approves inserting the following into the SC4 Organization Handbook for Clause 5.9:

5.9 Balloting Procedures

5.9.1 International Standards and Type II Technical Reports

Balloting procedures for developing ISO standards or Type II Technical Reports can be found in the ISO/IEC Directives Part 1, chapter 2. Information on how to acquire a copy of these procedures can be found in Appendix A.

5.9.2 SC4 Standing Documents

SC4 methods documents from SC4 working groups and committees will be published as SC4 standing documents which will provide methods and procedures for SC4 to carry out its standards development more effectively within SC4.

Copies of the proposed Standing Document will be circulated for ballot to P-members for a three month ballot. Approval of the proposed document shall be based on the procedures for a Committee Draft Document.

Any comments provided with a yes vote will be considered for making improvements to the document, but the vote will be considered as in favor of making the document operative as an SC4 Standing Document.

Any no vote must be accompanied by specific comments.

Changes to standing documents will be recommended by the working group or committee responsible. Changes will be made by providing a new version of the page containing the changes to the SC4 Secretary for approval at the next SC4 meeting.

Each Standing Document shall contain an annex Revision History Table indicating the Section or page change and the date accepted by SC4 and a list of those SC4 parts expressly exempt from the revision as approved. [SC4 Resolution 271]

RESOLUTION 295: (Toronto 1996-10)

SC4 notes that work under the Parametrics project (allocated the ISO number 14959) has identified areas which may require modifications to existing IRs, the preparation of a new IR or IRs, and the development of a document or documents under ISO 14959 covering the emerging area of General Case Parametrics.

SC4 resolves that these activities will for the present be combined within the project 14959 which will be allocated to WG12 with Mike Pratt as project leader. These arrangements will be subject to ongoing review as the structure of project deliverables is clarified.

SC4 thanks Roberto Greening for his work as leader of the Parametrics project during the formative period.

RESOLUTION 296: (Toronto 1996-10)

SC4 agrees to cancel project # 50, 10303-211, "Application protocol: Electronics test diagnostics and remanufacture" and project #78, 10303-311, "Abstract test suite: Electronics test diagnostics and remanufacture" due to current lack of activity.

RESOLUTION 297: (Toronto 1996-10)

SC4 authorizes preliminary (stage 0) work on Systems Engineering Data Representation and appoints Sylvain BARBEAU as project leader.

RESOLUTION 298: (Toronto 1996-10)

SC4 recommends that the SC4 organization handbook be amended as follows: "SC4 Conveners and deputy conveners shall be nominated by the SC4 P-members and shall serve for a maximum period of three years or for such shorter period as may be designated when they are elected. Successive extensions each of a maximum of three years may be approved by a vote of SC4."

RESOLUTION 299: (Toronto 1996-10)

SC4 accepts the revised schedules and justification, and reconfirms the continued standardization efforts for the following SC4 projects:

10303-1DAM, 10303-34, 10303-106, 10303-215, 10303-216, 10303-217, 10303-218, 10303-221, 10303-222, 10303-226, 10303-227, 10303-228, 10303-230, 13584-101, 13584-102, and 14959.

RESOLUTION 300: (Toronto 1996-10)

SC4 approves Phil Kennicott as the convener of WG12, SC4 Common Resources.

RESOLUTION 301: (Toronto 1996-10) SC4 authorizes preparatory (stage 0) work on Java programming language binding to the Standard Data Access Interface specification and appoints Tom Rando as project leader.

RESOLUTION 302: (Toronto 1996-10)

SC4 agrees to cancel Project #113, ISO 10303-13 “Architecture and methodology reference manual”, and to redirect this work towards an SC4 Standing Document and to the Part 1 amendment project.

RESOLUTION 303: (Toronto 1996-10)

SC4 authorizes preliminary (stage 0) work on the extension of capabilities of ISO 10303-21 and appoints Neal Laurence and David Price as joint project leaders, and requests a statement of scope of requirement be circulated to P-members.

RESOLUTION 304: (Toronto 1996-10)

SC4 requires that an AP document may have an informative annex containing a fully attributed EXPRESS specification of the ARM.

An ARM implementation may be taken as validation evidence at DIS according to resolution 226.

RESOLUTION 305: (Toronto 1996-10)

SC4 recognises this first successful step between WG2 and WG10 on a solution for the problem of interoperability between STEP (ISO 10303) and P-LIB (ISO 13584) within ISO/TC184/SC4 and encourages WG2 and WG10 to complete this work. SC4 encourages all STEP AP developers to study the feasibility of describing their library and dictionary data using the P-LIB standards.

RESOLUTION 306: (Toronto 1996-10)

SC4 authorizes a preliminary stage 0 project on “Design and Configuration of Manufacturing Systems” and appoints Torsten Kjellberg as project leader.

RESOLUTION 307: (Toronto 1996-10)

SC4 thanks its Canadian hosts and US meeting sponsors: The Standards Council of Canada, National Research Council of Canada, and US PRO. Particular thanks go to Melanie Varn, Erinbeth Massie, Kristi Adams, and Chuck Stark.

RESOLUTION 308: (Approved by mail ballot 1996-10)

SC4 notes the following technical SEDS reports as found in SC4 N 458, for incorporating into the affected part of ISO 10303:

10303-203: Reports 24, 25, and 27.

SC4 requests the SC4 Secretariat ensure these reports are made publicly available on SOLIS (SC4 ON-Line Information Service), and incorporated into technical corrigenda, amendments, or new editions when appropriate.

RESOLUTION 309: (Approved by mail ballot 1996-10)

STEP abstract test suites (ATSS) shall not place additional requirements on the implementors of application protocol (AP) parts. AP parts may however make normative references to an ATS and other conformance testing-related parts for terminology. AP parts should not invoke requirements defined in ATS parts of STEP.

RESOLUTION 310: (Approved by mail ballot 1997-03)

SC4 approves replacing clauses 6.2 and 6.3 of the SC4 Organization Handbook with the text found in ISO TC 184/SC4 N516. SC4 further authorizes editorial changes to other clauses of the handbook to maintain consistency with this new text. This resolution supersedes SC4 Resolutions #80 and #292.

RESOLUTION 311: (San Diego, CA USA)

SC4 approves the following new project leaders and/or project editors for the associated SC4 projects:

| ISO Project # | Project Lead | Document Editor |
|---------------------------|---------------------|------------------------|
| Java programming language | | Lisa McCabe |
| EXPRESS mapping language | | Ian Bailey |
| 10303-11E2 | | Phil Spiby |
| 10303-24 | | Peter Dupont |
| 10303-26 | | Lisa McCabe |
| 10303-208 | Chuck Amaral | Bill Burkett |
| 10303-216 | | Frank Stolte |
| 10303-224 | William Gruttke | William Gruttke |
| 10303-227 | Mark Palmer | Steve Kline |
| 10303-307 | Prajakta Ketkar | Prajakta Ketkar |
| 10303-308 | Chuck Amaral | Bill Burkett |
| 10303-321 | Sheila Lewis | Sheila Lewis |
| 10303-324 | William Gruttke | William Gruttke |
| 10303-501 | | Bill Anderson |
| 10303-502 | | Bill Anderson |
| 10303-503 | | Bill Anderson |
| 10303-510 | | Bill Anderson |
| 10303-515 | | Bill Anderson |
| 10303-517 | Martin Philipp | Martin Philipp |
| 13584-24 | | Eric Sardet |
| 13584-26 | Gerd Ehinger | Robert Schuler |
| 13584-31 | | Lutz R. Hiene |

RESOLUTION 312: (San Diego, CA USA)

SC4 supports working group representation at the JTC1 Joint Workshop on Registration of Metadata and requests the following delegates to attend:

WG2: Guy Pierra

WG10: Julian Fowler

Delegates are requested to prepare a written report on the workshop and submit the reports to the SC4 Secretary for distribution to p-members.

RESOLUTION 313: (San Diego, CA USA)

SC4 approves the following be included in the SC4 Organization Handbook under Clause 5.5 (reference ISO TC 184 SC4 N 492):

5.5.1 SC4 Policy for all Liaisons

SC4 standards need to interact efficiently with other relevant standards, as well as leverage standardization efforts outside SC4 that is related to the work of SC4. To do this effectively, SC4 should focus upon liaisons which are critical for the success of the SC4 work or for the acceptance of SC4 standards.

Before establishing a liaison, an appropriate mode of cooperation should be agreed upon by both parties. That mode could include one or more of the following:

- creating joint working group,
- establishing a memorandum of understanding,
- appointing people to actively liaise,
- exchanging information via E-mail,
- exchanging information by participating in the SC4 Liaison Plenary,
- exchanging documents,
- presenting topical or technical training sessions by either organization.

Establishing any liaisons must follow the ISO directives which distinguishes between another technical committee liaison, an A-liaison or a B-liaison. (IDP1, 1.13-1.15) It is the responsibility of the SC4 Secretariat to maintain the list of liaisons consistent with ISO Central Secretariat.

RESOLUTION 314: (San Diego, CA USA)

SC4 wishes to thank Ms. Barbara Warthen for her liaison role with ISO TC 211, and accepts her resignation from this position. SC4 appoints Mr. Bernd Wenzel as the person to actively liaise on behalf of SC4 to ISO TC 211.

RESOLUTION 315: (San Diego, CA USA)

SC4 requests its Secretary to establish an active two-way liaison with ISO TC213, “Dimensional and geometrical product specification and verification”, and approves Mr. Alan Jones as the person to actively liaise to ISO TC213 on SC4’s behalf.

RESOLUTION 316: (San Diego, CA USA)

SC4 requests an active liaison with ISO TC 29/WG34, “Small tools: Computerized machining data exchange”, and requests the SC4 Secretary confirm this liaison with ISO Central Secretariat and request ISO TC 29/WG34 identify its liaison to SC4. SC4 approves Guy Pierra and Saburo Tanatsugu as the persons who actively liaise with ISO TC 29/WG34 on behalf of SC4/WG2; and Roland Jochem as the person who actively liaises with ISO TC 29/WG34 on behalf of SC4/WG8.

RESOLUTION 317: (San Diego, CA USA)

SC4 accepts the Industry Alliance for Interoperability’s (IAI) request for A-liaison status to SC4, and recognizes Jeffrey Wix as the person to actively liaise from IAI to SC4. SC4 approves Wolfgang Haas as the active liaison from SC4 to IAI. SC4 encourages other P-members, where there is a national/regional IAI chapter, to nominate other SC4-to-IAI liaisons and provide such nominations to the SC4 Secretary by 1997-08-01.

RESOLUTION 318: (San Diego, CA USA)

SC4 cancels SC4 Project #102 as New Work Item: (San Diego, CA USA) ISO 10303-228, “Application protocol: Building services: Heating, ventilation, and air conditioning”, and its associated Abstract Test Suite.

RESOLUTION 319: (San Diego, CA USA)

SC4 approves “Application protocol: Building services: Heating, ventilation, and air conditioning” and “Abstract test suite: Building services: Heating, ventilation, and air conditioning” as preliminary work items, stage 0, in recognition of the initiatives’ continued merit within SC4.

RESOLUTION 320: (San Diego, CA USA)

SC4 authorizes a new Preliminary Work Item (stage 0) to develop a NODIF AP and appoints Timothy Wise as project leader.

RESOLUTION 321: (San Diego, CA USA)

SC4 authorizes preparatory (stage 0) work on product life-cycle support, to develop a high-level planning model and if appropriate to formulate NWI proposals by October 1997. John Dunford and Rick Bsharah are appointed as joint project leaders, and the project is assigned to WG3/T8 in addition to their existing approved projects.

RESOLUTION 322: (San Diego, CA USA)

SC4 supports the concept of all three MANDATE projects under the new work item, ISO 15531, and requests its Secretary to distribute to its P-members, a second CD ballot of 15531-31 along with the initial committee drafts of 15531-1, 15531-21, and 15531-41.

RESOLUTION 323: (San Diego, CA USA)

SC4 cancels SC4 Project #62 as New Work Item: ISO 10303-220, “Application protocol: Process planning, manufacture, and assembly of layered electronic products” and its associated abstract test suite.

RESOLUTION 324: (San Diego, CA USA)

SC4 approves “Application protocol: Process planning, manufacture, and assembly of layered electronic products” and “Abstract test suite: Process planning, manufacture, and assembly of

layered electronic products” as preliminary work items, stage 0, in recognition of the initiatives’ continued merit within SC4.

RESOLUTION 325: (San Diego, CA USA)

SC4 endorses continued ISO leadership of all the JWG9 standards, and requests its secretary to forward this endorsement to ISO for the ISO Technical Management Board and IEC Committee of Action approval. During stages 0 and 1 there shall be strong attempts to coordinate and communicate with the appropriate IEC Technical Committees. The remaining procedures for initiating, reviewing, balloting, publishing, and revisions of electrical/electronic standards within ISO/TC184/SC4 will be unchanged.

RESOLUTION 326: (San Diego, CA USA)

SC4 cancels SC4 Project # 114, ISO 10303-1 Amendment, “Overview and fundamental principles”.

RESOLUTION 327: (San Diego, CA USA)

SC4 approves a Preliminary Work Item to define the amendment to ISO 10303-1 by May 1998 and appoints Howard Mason as Project Leader. SC4 creates a STEP Overview Editing committee and invites P-member nominations to that committee.

RESOLUTION 328: (San Diego, CA USA)

SC4 approves the Preliminary Work Item on SGML and industrial data described in document WG10 N114, as well as in WG10 N118 attachment 1, and appoints Nigel Shaw and Daniel Rivers-Moore as joint Project Leaders. This project is assigned to WG10.

RESOLUTION 329: (San Diego, CA USA)

SC4 approves the Preliminary Work Item on the SC4 Data Architecture described in document WG10 N113 and appoints Matthew West as Project Leader. This project is assigned to WG10.

RESOLUTION 330: (San Diego, CA USA)

SC4 cancels project #7, 10303-33, Conformance testing methodology and framework: Structure and use of abstract test suites.

RESOLUTION 331: (San Diego, CA USA)

SC4 accepts the QC/WG11 proposal to limit coverage requirements to Application Objects and to leave to the ATS developers the choice of selecting which combinations of attributes and assertions are of primary interest for the conformance testing.

SC4 approves the following metrics in order for an Abstract Test Suite (ATS) to proceed to Technical Report Type II or Committee Draft ballot. An ATS must satisfy the following minimum coverage requirements:

1. All application object test purposes (TPs) must be covered (i.e. the ATS must contain test cases in which these TPs are verdicted).

2. Each test case must be complete. Each preprocessor input specification must have at least one accompanying postprocessor mirror. Each input specification must represent a complete and valid exchange scenario.

The AP/ATS team is responsible to decide necessary additional coverage requirements in its ATS other than those specified in the minimum requirements.

SC4 recognizes that 10303-302, 303, 304, 305, and 307 were into the Quality Committee by 1997-05-15 and ready for Technical Report Type II ballot prior to the above metrics being approved. SC4 supports their release for Technical Report ballot, as previously agreed upon, at the completion of the Quality Committee's review.

SC4 requests WG11 and Quality Committee provide the corrective text to all appropriate SC4 Standing Documents (by clause) to reflect these new metrics for assessing the minimum coverage. The Quality Committee Production Support Team shall perform spot checks on all ATSs to verify that the metrics are satisfied.

RESOLUTION 332: (San Diego, CA USA)

SC4 thanks Phillip Kennicott for his dedicated service and technical contributions to the work of ISO TC 184/SC4, and wishes him well in his new endeavors.

RESOLUTION 333: (San Diego, CA USA)

SC4 approves Greg Paul as Convener of WG12, SC4 Common Resources.

RESOLUTION 334: (San Diego, CA USA)

SC4 requests WG12 to produce consensus-built documents of revisions to 10303-41, 43, and 44 to be completed and into Quality Committee for qualification no later than 1997-08-15. Quality Committee is to give the review and signoff of these parts its highest priority. P-members are actively encouraged to provide technical experts to both WG12 and Quality Committee to meet these goals.

In the case that WG12 does not reach consensus by the end of the [revisions development] workshop (1997-07-25), the SC4 Chair will decide by 1997-07-31 which documents are sent to Qualification by 1997-08-15. The Change Management Team is requested to provide a clear business framework for guiding the technical debate prior to the workshop (1997-07-21).

RESOLUTION 335: (San Diego, CA USA)

SC4 approves the changes to the Abstract Test Suite Guidelines, SC4 N 536, and requests the SC4 Secretariat take appropriate action to publish and disseminate this SC4 Standing Document to the P-members.

RESOLUTION 336: (San Diego, CA USA)

SC4 establishes an ad-hoc Requirements Team to update the SC4 documentation on the industry requirements for SC4 standards and the terminology for describing these requirements. This work will build on the work of the SC4 Policy and Planning Committee. Mark Palmer is requested to serve as team leader. The Requirements Team will deliver their initial report to SC4 at their 1997-10-24 meeting.

SC4 encourages SC4 P-members to provide information and resources to support this team.

RESOLUTION 337: (San Diego, CA USA)

SC4 creates an ad hoc group "Shared Enterprise Data" to:

- Review the developments in other standards organisations related to data modelling and standardisation of enterprise information
- Establish an SC4 position with respect to these activities that can be presented to other standards bodies and to the proposed coordinating group.

P-members and A-liaisons are invited to nominate experts for the group, and SC4 WGs may also nominate experts if not already included in the list of nominations.

SC4 further requests its Chairman and Secretary to ensure that TC184 communicates to ISO the interest of SC4 in any joint coordination activity with other standards bodies.

RESOLUTION 338: (San Diego, CA USA)

SC4 thanks its United States US PRO sponsor. Particular thanks go to Melanie Ridenhour, Erinbeth Massie, Kristi Adams, Susan Gilley, and Chuck Stark.;

RESOLUTION 339: (Florence, Italy)

SC4 approves the following new project leaders or project editors for the associated SC4 projects:

| ISO Project # | Project Lead | Document Editor |
|----------------------|---------------------|------------------------|
| PWI: "10303-220/320" | John DeLoof | |
| 10303-24 | David Price | David Price |
| 10303-207 | Prajakta Ketkar | Prajakta Ketkar |
| 10303-221 | Theo Arntz | |
| 10303-223/323 | | Somendra Singh |
| 10303-229/329 | | Somendra Singh |
| 10303-317 | Burt Gischner | Burt Gischner |
| 10303-518 | Jochen Haenisch | Jochen Haenisch |

RESOLUTION 340: ISO TC 184/SC5 Liaison to/from SC4 (Florence, Italy)

SC4 wishes to thank Mr. Neal Laurance for his liaison role with ISO TC 184/SC5, and endorses SC5's liaison representative, Mr. Meinolf Groepper, as a joint active liaison between SC5 and SC4.

RESOLUTION 341: (Florence, Italy)

SC4 cancels Resolution 319 due to lack of leadership and activity on these preliminary work items.

RESOLUTION 342: Expectations for Normative References to SC4 Parts (Florence, Italy)

SC4 requires that by the time a part is being registered as a Draft International Standard (DIS) its associated normative references shall also be registered at least as Draft International Standards.

By the time a part is being registered as a Final Draft International Standard (FDIS) its normative references shall be at least registered as Draft International Standards (DIS).

RESOLUTION 343: WG12 Deputy Convener (Florence, Italy)

SC4 approves Michael Endres as Deputy Convener of WG12, SC4 Common Resources.

RESOLUTION 344: Appreciation for Service as JWG9 Convener (Florence, Italy)

SC4 wishes to thank Shaun Devlin for his service to SC4 as Convener of JWG9, ISO/IEC Electrical/Electronics Applications.

RESOLUTION 345: Appreciation for Service as WG10 Convener (Florence, Italy)

SC4 wishes to thank Julian Fowler for his service to SC4 as Convener of WG10, Technical Architecture.

RESOLUTION 346: Quality Committee Deputy Convener (Florence, Italy)

SC4 approves Julian Fowler as Deputy Convener of the Quality Committee.

RESOLUTION 347: Updates To Guidelines For The Development Of Abstract Test Suites (Florence, Italy)

SC4 approves the changes to 'Guidelines for the development of abstract test suites' as provided in SC4 N637.

RESOLUTION 348: PWI - Requirements Definition for Future Editions of AP 203 (Florence, Italy)

SC4 establishes a Preliminary Work Item within WG3, to perform requirement definition of future editions of AP 203 and appoints Laurence J. McKee as project leader.

RESOLUTION 349: Appreciation for Service as WG3 Convener (Florence, Italy)

SC4 wishes to thank Barbara Warthen for her service to SC4 as Convener of WG3, Product Modeling.

RESOLUTION 350: Numbering Designation of the Parametrics Efforts (Florence, Italy)

SC4 directs the parametrics team to number any proposed standards that result from this work as parts of ISO 10303. The 14959 designation shall be retired/recycled.

RESOLUTION 351 (Florence, Italy)

SC4 thanks its Italian UNINFO host and sponsor for the SC4 meeting in Florence, Italy. Particular thanks go to Carla Sirocchi, Elena Carnevale, Sylvia Carnevale, Jenny Martellini, and Luciano Lauro.

RESOLUTION 352 (Approved by mail ballot resolution 1998-03-18)

SC4 approves Gerald Radack as Convener of WG3, Product Modeling.

RESOLUTION 353 (Approved by mail ballot resolution 1998-03-18)

SC4 approves Bernd Wenzel as Convener of WG10, Technical Architecture.

RESOLUTION 354 (Bad Aibling, Germany)

SC4 approves the following new project leaders or project editors for the associated SC4 projects:

| ISO Project # | Project Lead | Document Editor |
|---|---------------------|---|
| 10303-221 | | David Leal (primary) Hans Teijgeler.(alt.) |
| 10303-501, -502, -503, -510, -515 | | Len Slovensky |
| 10303-232 | | Greg Paul |
| 10303-314 | Manfred Fischer | Manfred Fischer |
| TR : “Parametric representation and exchange” | Richard Wittenoom | |

RESOLUTION 355 (Bad Aibling, Germany)

SC4 instructs the ISO 10303-221 project leader and the ISO 15926 PWI team leader to develop the technical and business proposal for approval by SC4 before submission for approval by ISO.

SC4 instructs its secretary to notify the ISO/CEO, in accordance with the ISO Directives, that the establishment of a registration authority for class libraries will be necessary to support the use of ISO 10303-221 and ISO 15926. SC4 asks the project leaders of ISO 10303-221 and the PWI Team for ISO 15926 to work with the ISO CEO to create a suitable registration authority.

SC4 instructs the project teams to report on progress at its meeting in San Francisco and present the final technical and business proposal for approval by SC4 before submission for approval by ISO.

SC4 asks that any other projects that may be interested in this activity work with the two project leaders to incorporate their requirements in the proposal.

RESOLUTION 356 (Bad Aibling, Germany)

TC184/SC4 instructs its secretariat and PPC to publish the SC4 organizational handbook in a Web-based format which does not duplicate the ISO directives, but provides hypertext links to the electronic version of the document.

RESOLUTION 357 (Bad Aibling, Germany)

SC4 wishes to thank Ms. Sharon Kemmerer for her contributions as SC4 Secretary. SC4 presents a plaque of gratitude in honor of Sharon Kemmerer which shall read:

June, 1998

ISO TC 184/SC4 Recognizes

Ms. Sharon Kemmerer

In Appreciation for

Outstanding Performance and Contributions as
SC4 Secretary
1995-1997

RESOLUTION 358 (Bad Aibling, Germany)

SC4 resolves to add the following language to the SC4 Handbook, Section 2.3 The Proposal Stage. The language shall be added as a new paragraph after paragraph 3.

For any normative references, their status at the time the new work item is expected to be registered for circulation as a Draft International Standard shall be provided. For normative references whose status is not at least Draft International Standard (4.00), Final Draft International Standard (5.00) or International Standard (6.00) at the time of the proposal, the expected date for registration as a Draft International Standard shall be provided. If the normative reference has not been circulated as a Committee Draft at the time of the proposal, the expected date for circulation of the Committee Draft shall be also be provided. The source of dates shall be the Project Master Schedule Data Base maintained by the Secretariat.

RESOLUTION 359 (Bad Aibling, Germany)

SC4 approves acceptance of the PWI proposal (SC4 N715) entitled 'History-based shape modeling', and directs the Secretariat to take appropriate action to initiate the Work Item.

RESOLUTION 360 (Bad Aibling, Germany)

SC4 approves Bruno Schilli as Deputy Convener of ISO TC184/SC4/WG3.

RESOLUTION 361 (Bad Aibling, Germany)

SC4 resolves that ISO 10303 Release 2.0 comprises the following parts and instructs the project leaders to complete the work necessary to make them international standards by April, 2000.

- Part 1E2 Overview and Fundamental Principles
- Part 11* Description Methods: The EXPRESS Language Reference Manual
- Part 21* Implementation methods: Clear text encoding of the exchange structure
- Part 22 Implementation methods: Standard data access interface specification
- Part 23 Implementation methods: C++ language binding to the standard data access interface
- Part 24 Implementation methods: C language binding to the standard data access interface
- Part 26 Implementation methods: Interface definition language binding to the standard data access interface
- Part 31* Conformance testing methodology and framework: General concepts
- Part 32 Conformance testing methodology and framework: Requirements on testing laboratories and clients
- Part 34 Conformance testing methodology and framework: Abstract test methods
- Part 41E2 Integrated generic resource: Fundamentals of product description and support
- Part 42E2 Integrated generic resource: Geometrical and topological representation
- Part 43E2 Integrated generic resource: Representation structures
- Part 44E2 Integrated generic resource: Product structure configuration
- Part 45 Integrated generic resource: Materials
- Part 46 * Integrated generic resource: Visual presentation

- Part 47 * Integrated generic resource: Shape variation tolerances
- Part 49 Integrated generic resource: Process structure and properties
- Part 101* Integrated application resource: Draughting
- Part 104 Integrated application resource: Finite element analysis
- Part 105* Integrated application resource: Kinematics
- Part 106 Integrated application resource: Building construction core model
- Part 201* Application protocol: Explicit draughting;
- Part 202* Application protocol: Associative draughting;
- Part 203* Application protocol: Configuration controlled design
- Part 204 Application protocol: Mechanical design using boundary representation;
- Part 205 Application protocol: Mechanical design using surface representation;
- Part 207 Application protocol: Sheet metal die planning and design;
- Part 208 Application protocol: Life cycle management - Change process;
- Part 209 Application protocol: Composite and metallic structural analysis and related design;
- Part 210 Application protocol: Electronic assembly, interconnect, and packaging design;
- Part 212 Application protocol: Electrotechnical design and installation;
- Part 213 Application protocol: Numerical control process plans for machined parts
- Part 214 Application protocol: Core data for automotive mechanical design processes;
- Part 221 Application protocol: Functional data and their schematic representation for process plant;
- Part 222 Application protocol: Exchange of product data for composite structures
- Part 223 Application protocol: Exchange of design and manufacturing product information for casting parts;
- Part 224 Application protocol: Mechanical product definition for process plans using machining features;
- Part 225 Application protocol: Building elements using explicit shape representation;
- Part 227 Application protocol: Plant spatial configuration;
- Part 501 Application interpreted construct: Edge based wireframe
- Part 502 Application interpreted construct: Shell-based wireframe
- Part 503 Application interpreted construct: Geometrically bounded 2D wireframe
- Part 504 Application interpreted construct: Draughting annotation
- Part 505 Application interpreted construct: Drawing structure and administration
- Part 506 Application interpreted construct: Draughting elements
- Part 507 Application interpreted construct: Geometrically bounded surface
- Part 508 Application interpreted construct: Non-manifold surface;
- Part 509 Application interpreted construct: Manifold surface
- Part 510 Application interpreted construct: Geometrically bounded wireframe
- Part 511 Application interpreted construct: Topologically bounded surface
- Part 512 Application interpreted construct: Faceted boundary representation
- Part 513 Application interpreted construct: Elementary boundary representation
- Part 514 Application interpreted construct: Advanced boundary representation
- Part 515 Application interpreted construct: Constructive solid geometry
- Part 517 Application interpreted construct: Mechanical design geometric presentation
- Part 518 Application interpreted construct: Mechanical design shaded representation

- Part 519 Application interpreted construct: Geometric tolerances
- Part 520 Application interpreted construct: Associative draughting elements

Also included are the technical report 10303-12 Description Methods: The EXPRESS-I language reference manual and the technical reports 10303-302 to -305, -307 to -310, -312 to -314, -321 to -325, and -327 which are the abstract test suites for the corresponding application protocols. An asterisk (*) denotes parts that are already international standards. The E2 notation after a part number denotes a second edition.

Additional parts may be considered for Release 2, however, no additional part will be included if its inclusion will result in a schedule slippage.

Moreover, if there is slippage in the adopted schedule of any part in the above list, then SC4 may vote to defer that part to a future release.

SC4 requests project leaders to confirm that their projects can achieve the proposed dates and instructs them to provide firm milestones to the secretariat.

SC4 requests that the Secretariat report on any slippage of these parts at each SC4 meeting so that appropriate action can be taken.

RESOLUTION 362 (Bad Aibling, Germany)

SC4 approves extending the scope of the SEDS procedures to cover:

- SC4 standing documents;
- SC4 technical reports.

SC4 requests its secretariat to incorporate this change into the SC4 handbook along with the new SEDS procedures as described in SC4 N 714.

RESOLUTION 363 (Bad Aibling, Germany)

SC4 requests an active two-way liaison with European Marine STEP Association, and requests the SC4 Secretary confirm this liaison with ISO Central Secretariat. SC4 approves Mr. Tim Turner as the person to actively liaise with EMSA on SC4's behalf.

RESOLUTION 364 (Bad Aibling, Germany)

SC4 requests an active two-way liaison with ISO/IEC JTC1/WG4 (Document Description Languages), and requests the SC4 Secretary confirm this liaison with the ISO Central Secretariat. SC4 approves Nigel Shaw as the person who actively liaises with ISO/IEC JTC1/WG4 on behalf of SC4; and Elliot Kimber as the person who actively liaises with SC4 on behalf of ISO/IEC JTC1/WG4.

RESOLUTION 365 (Bad Aibling, Germany)

SC4 resolves to forward "Technical Corrigendum 2, Industrial automation systems and integration — Product data representation and Exchange — Part 203: Application protocol: Configuration controlled 3D designs of mechanical parts and assemblies" to ISO for publication, including ISO TC 184/SC4 N 731.

RESOLUTION 366 (Bad Aibling, Germany)

SC4 approves the Preliminary Work Item on Process Plant Operations and Maintenance described in the proposal document (SC4 N 733).

SC4 assigns this Preliminary Work Item to WG3, and appoints Dr Graham Bird as Project Manager, Dr. Ming Liang Lu as Technical Leader and N. K. Nakada as Technical Co-Leader.

RESOLUTION 367 (Bad Aibling, Germany)

SC4 wishes to thank Mr. Groepper for his active work within the SC4 community, for his service on the SC4 Policy and Planning Committee, both as a member and as Rapporteur and for his work as joint active liaison between TC 184/SC5 and SC4.

RESOLUTION 368 (Bad Aibling, Germany)

SC4 notes the work of IEC Sector Board 3 and the encouragement given by TC 184 (Paris Resolution 1) to the TC 184 Chairman. SC4 encourages its Chairman and Secretary to continue their supporting efforts to establish a comprehensive, industry-driven global strategy for industrial automation standards.

RESOLUTION 369 (Bad Aibling, Germany)

SC4 approves the establishment of a Preliminary Work Item on Dimensional Inspection Information Exchange (SC4 N734).

RESOLUTION 370 (Bad Aibling, Germany)

SC4 notes the progress to extend the ISO/IEC UN/ECE Memorandum of Understanding into the domain of electronic business and the specific invitation for the participation of the SC4 Chairman as a member of the MoU Management Group. SC4 endorses the Paris 21 and 22 resolutions of TC 184 and encourages the SC4 Chairman to act as representative and point of contact.

RESOLUTION 371 (Bad Aibling, Germany)

SC4 notes the Paris 3 resolution of TC 184 and requests the SC4 Secretariat to prepare a report for the Beijing meeting describing the anticipated electronic operation of SC4 by September 1999. P-members, O-members, and Liaisons that will require special considerations or exemptions from electronic operation should make those known to the Secretariat by September 1, 1998 so that they may be included in the report.

RESOLUTION 372 (Bad Aibling, Germany)

SC4 approves the MoU as documented in SC4 N 732.

RESOLUTION 373 (Bad Aibling, Germany)

SC 4 instructs its Change management team to check all Proposals for New Work Items against timescale and resources.

The following questions for check have to be considered before a proposal goes out for ballot to P-members for vote:

- General scope of the standard/part
- What other standards/parts are affected?

- What other standards/parts have to change for this work to be successful?
- What other standards/parts can be improved by this work?
- What other PWI/NWI will need to be developed?
- What is the estimated schedule?
- What resources are committed
- What schedules need to be coordinated

- Is there an overlap with the existing projects?
- Should scopes be modified?
- What other projects should be consulted?

A report based on these question shall be added to the New Work Item Proposal to inform P-members.

RESOLUTION 374 (Bad Aibling, Germany)

SC4 approves the Preliminary Work Item on STEP Modularization as described in document WG10 N185 (SC4 N 736) and appoints David Price as Project Leader. This project is assigned to WG10.

SC4 requests the projects to address validation of the process across multiple application protocols and the organization required to support implementation of the concept.

SC4 directs the project to work in close cooperation with the data architecture project.

RESOLUTION 375 (Bad Aibling, Germany)

SC4 approves the PWI in furniture product data and project data as described in SC 4 N 735.

SC4 assigns the project to WG3.

SC4 appoints Miguel Borràs and Ricardo Gonçalves as projects leaders.

RESOLUTION 376 (Bad Aibling, Germany)

In order to provide a firm foundation for the next release of SC4 standards tentatively scheduled for 2003, SC4 requests:

- P-members to supply statements of user requirements for this timescale, taking into account the strategic plan for SC4 and the requirements document WG 10 N 173, in writing to the Secretariat by 15 September 1998;
- Working groups and the Quality Committee, as well as the leaders of any PWI work, to supply statements of any input and key milestones for technology and development processes, in writing to the QC Change Management Team leader by 15 September 1998.

The PPC and Change Management Team are requested to make a progress report for consideration by the SC4 meeting in Beijing.

RESOLUTION 377 (Bad Aibling, Germany)

SC4 resolves to ensure that the international standard parts of STEP are Year 2000 compliant and to include necessary revisions for compliance as a part of the Technical Corrigendum for EXPRESS errors to be completed prior to the Beijing meeting. SC4 directs the Convenors of

WG3, WG11, and WG12 to further examine other Parts and to propose changes where necessary by Beijing.

RESOLUTION 378 (Bad Aibling, Germany)

SC4 wishes to thank Bernd and Ramona Wenzel and the EuroSTEP support staff including the following members for their excellent service and hospitality in facilitating the Spring 1998 SC4 meeting in Bad Aibling:

- Karl Brandt
- Patrick Leicht
- Malanie Mohaupt
- Andreas Saliseh

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